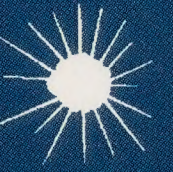


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The Bulletin of Zoological Nomenclature

The Official Periodical
of the International Commission
on Zoological Nomenclature

ICZN



THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

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International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

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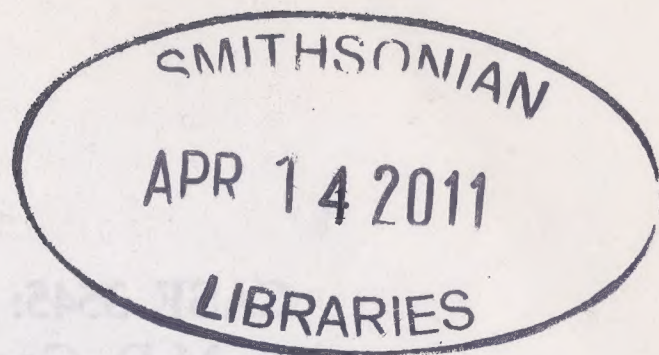
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Cover image: *Gryllotalpa gryllotalpa* (Linnaeus, 1758), the European mole cricket (Latin: *gryllus* – cricket, *talpa* – mole, from its fossorial limbs, fine hairs and subterranean habit). Widespread in the Western Palaearctic region and introduced into parts of the U.S.A. this insect can be an agricultural pest in significant numbers, although in the U.K. it is extremely rare and subject to a U.K. Biodiversity Action Plan (report sightings to g.beccaloni@nhm.ac.uk). Detail from plate 456 of *British Entomology: Original Drawings*, vol. 10, by John Curtis (1862) (© Natural History Museum, London).



BULLETIN OF ZOOLOGICAL NOMENCLATURE

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31 March 2011

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 67, part 4, 20 December 2010) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3543: *Stromateus niger* Bloch, 1795 (currently *Parastromateus niger*; Osteichthyes, Perciformes, CARANGIDAE): proposed conservation of prevailing usage by the suppression of its senior synonym *Coryphaena apus* Brünnich. E.H. Williams Jr. & L. Bunkley-Williams.

CASE 3544: *Apis armbrusteri* Zeuner, 1931 (Insecta, Hymenoptera): proposed conservation by designation of a neotype. M.S. Engel, U. Kotthoff & T. Wappler.

CASE 3545: *Heterohelix* (Foraminiferida, HETEROHELICIDAE): proposed suppression. M.D. Georgescu.

CASE 3546: *Radiolites fleuriauxa* d'Orbigny, 1842 (currently *Praeradiolites fleuriauxus*; Bivalvia, RADIOLITIDAE): proposed replacement as type species of *Praeradiolites* Douvillé, 1902 by *Sphaerulites ponsiana* d'Archiac, 1835. J.M. Pons & E. Vicens.

CASE 3547: *Cryptotermes dudleyi* Banks, 1918 (Insecta, Isoptera, KALOTERMITIDAE): proposed precedence over *Calotermes havilandi parasita* Wasmann, 1910. K. Krishna & M.S. Engel.

CASE 3548: A proposal for the treatment of *Mémoires pour servir à l'histoire des insectes* by De Geer (1752–1778) and the additional volume by Retzius (1783). F. Wieland and F. Welter-Schultes.

CASE 3549: *Macropsalis fabulosa* Phillipps & Grimmett, 1932 (Arachnida, Opiliones, PHALANGIOIDEA): proposed replacement of the neotype. C.K. Taylor & M.S. Harvey.

CASE 3550: *Graeteriella* Kiefer, 1937 (Copepoda, Cyclopoida, CYCLOPIDAE): proposed precedence over *Graeteriella* Brehm, 1926. F. Fiers.

CASE 3551: *Orithyia* Fabricius, 1798 (Crustacea, Decapoda, Brachyura): proposed precedence over *Orithuja* Weber, 1795. P.K.L. Ng, D. Guinot & P.J.F. Davie.

CASE 3552: *Cerithiopsis tubercularis* var. *nana* Jeffreys, 1867 (currently *Cerithiopsis nana*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by suppression of *Cerithiopsis nana* Mayer, 1864. A. Cecalupo & E. Robba.

CASE 3553: *Helix atlantica* Morelet & Drouët, 1857 (Mollusca, Gastropoda, Pulmonata): proposed conservation of current usage by designation of a neotype. A.M. de Frias Martins, L. Silva, K. Jordaens & T. Backeljau.

CASE 3554: *Anaphes* Haliday, 1833 (Insecta, Hymenoptera): proposed designation of *A. fuscipennis* Haliday, 1833 as the type species. J.T. Huber, J.S. Noyes, A. Polaszek & S. Triapitsyn.

Page charges – new policy

The costs of publishing the BZN now require us to request page charges of £30 per page for all Cases, General Articles and for Comments that are one full printed page or longer. We do not want to discourage contributions to the work of the Commission, thus a waiver is available for authors who are unable to pay. A waiver form is available on the ICZN website (<http://iczn.org/content/page-charges>) and should be signed by you and your head of department if you are in a professional position and include a brief explanation of why you are unable to help support publication costs. Examples of appropriate waiver considerations include authors in unwaged positions or in countries with currency exchange difficulties. If a waiver is not received and approved at the time of acceptance of your contribution for publication, you will be sent an invoice for your page costs. Payment can be accepted by PayPal, credit card or cheque.

The International Trust For Zoological Nomenclature

The International Trust For Zoological Nomenclature (the Trust) was founded in 1947 to manage the Commission's financial matters. It is a registered charity, based in the U.K. (No. 211944). At present, the Trust consists of 27 members from 13 countries. Discussion of the Trust's activities can be found on the ICZN website <http://iczn.org/>.

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What's in a name? Attenborough & Fortey on animals **ICZN fundraising lecture**

Sir David Attenborough and Prof. Richard Fortey presented a lecture celebrating the work of the International Commission on Zoological Nomenclature (ICZN) and the global need for stable zoological nomenclature on 16 December 2010. Nearly 700 people filled the beautiful Ondaatje Theatre of the Royal Geographical Society, London, to capacity. Despite cold and rainy London weather, the hall was abuzz with anticipation as people arrived to see these titans of natural history presentation and palaeo and earth sciences writing. A busy and highly efficient team of volunteers helped people get checked in, directed them to the stand selling books by the speakers, to the bar and to their seats. Members of the International Trust for Zoological Nomenclature (ITZN) welcomed specially invited VIPs. The excitement was palpable.

The lecture began with a warm welcome and insightful introduction from Dr Michael Dixon, Chairman of the Trust. Professor Fortey then followed with a lively explanation of why biological nomenclature is so critical and how the Commission works. He continued with examples from history and his own work on trilobites that revealed the rich background and meaning in taxonomic names. The audience laughed at names that say it all – about the organism, or about the taxonomist and what they were really expressing with a particular animal name. Sir David then took the stage, relating examples of scientific names that each told a story in themselves. His ability to imbue every description with images and emotion



Fig. 1. Sir David Attenborough and Prof. Richard Fortey bringing nomenclature to life on the stage of the Royal Geographical Society. (Image: E. Michel/NHM Interactive Media Film Unit).



Fig. 2. Sir David Attenborough has been a long-term proponent of the ICZN. He and Professor Richard Fortey are old friends and have recently filmed together in Morocco for the BBC special *First Life*. (Photo: R. Fortey).



Fig. 3. Sir David telling the audience that he thought Linnaeus was making a nomenclatural joke about early collectors with the name *Paradisaea apoda*, as even then no taxonomist would have seriously believed that the Great Bird of Paradise had neither feet nor wings. (Image: E. Michel/NHM Interactive Media Film Unit).

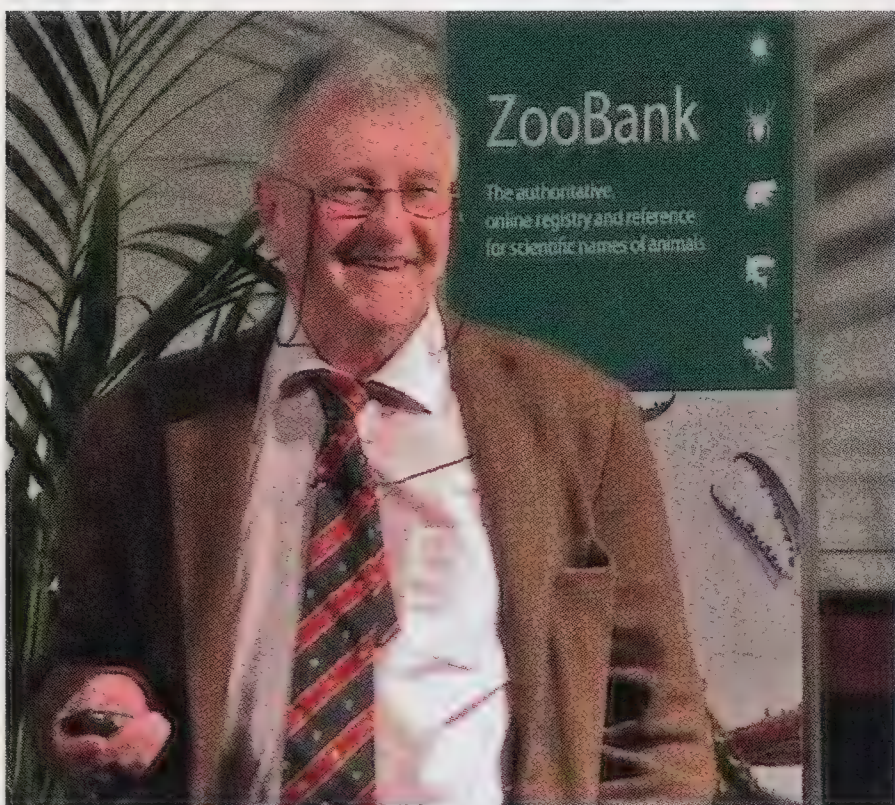


Fig. 4. Professor Fortey lecturing in front of the ZooBank poster. (Image: E. Michel/NHM Interactive Media Film Unit).



Fig. 5. After the lecture both speakers enthusiastically settling in to sign books and talk with their fans, who also got to know each other while having a drink in the historic RGS Map Room and waiting in the long queue. (Photo: S. Knapp)

brought the audience to the edges of their seats. Sir David brought life to stories about nomenclature with the addition of adventure, farce, surprise, competition, irony, sycophancy and beauty. Both speakers spoke of the combination of honour and uncertain implications of having taxa named after them. Perhaps examining too closely why a giant flat trilobite, an extinct prickly thing, or the first vertebrate known to copulate has been given your name might lead to too many additional, unnecessary questions!

It was clear that, in the right hands, the topic of nomenclature can be made stimulating and entertaining for a general audience. This event was one step in increasing public awareness of the importance of the work of the ICZN. The evening showed that there is public goodwill towards our work, especially when presented by paragons of science communication.

In addition to the pure enjoyment of the moment, the event yielded other successes. Sir David has agreed to become a patron of the ITZN fundraising campaign, joining Professor E.O. Wilson in giving high profile support for the work of the Commission. A modest profit was realised from the evening, several additional donations were received, connections were made with additional potential promoters and one audience member was moved to volunteer to run a marathon with charitable fundraising on behalf of the ICZN! A professional film was made of the lecture, which will be distributed to potential funders and to the wider taxonomic community in various ways. Follow-up work using this valuable outreach resource will help the ITZN develop a sustainable funding source for the future.

We thank the speakers for the energy they poured into making this a brilliant evening. Support through logistical help or financial contribution was provided by the NHM, the Royal Geographical Society, publishers Harper Collins Publishing, Random House Publishing, Neal's Yard Dairy. Slides and images were courtesy of Ellinor Michel, Richard Pyle, George McGavin, Vince Smith, ARKive, NHM Picture Library, Warren Photographic, Bios/Dominique Halleux.

The NHM Interactive Media Film Unit coordinated a professional film crew from Creation Company and provided staging. Edited clips will be available online and a full version of the film will be available by for a minimum donation to the ICZN. Information will be available here: iczn.org/content/fundraising_lecture.

ZooBank progress report

Richard L. Pyle (ZooBank Developer)

Department of Natural Sciences, Bishop Museum, Honolulu, Hawaii, U.S.A.
(e-mail: deepreef@bishopmuseum.org)

Commissioner Richard Pyle attended a meeting in Christchurch, New Zealand, in late November 2010 to discuss the data model for the Global Names Usage Bank (GNUB), which is planned to serve as the data backbone for ZooBank. Attendees included representatives of the three major partners of International Plant Names Index (IPNI) – including the Royal Botanic Gardens, Kew, Harvard University, and the Australian Plant Names Index (APNI) – as well as representatives for Index Fungorum (IF) and the Atlas of Living Australia (ALA). The purpose of the meeting was to review, in detail, the data model that had emerged from previous discussions involving architects of ZooBank and Index Fungorum, and determine its suitability for use in the next generation implementation of IPNI. The meeting was intensive, and extremely productive. The consensus data model that emerged from the meeting is being implemented now, and will serve as the live data backbone for a revised ZooBank website, scheduled for release later this year. Meanwhile, ZooBank continues to grow with, as of this writing (15 February 2011), 73,633 registered nomenclatural acts, 29,522 registered published works, and 11,955 registered authors. This represents an average rate of nearly 100 new name registrations within nearly 33 published works per month during the past six months.

BioCode – ICZN Introduction

To date, the three major Codes of type-based organismal nomenclature have been developed with almost an exclusive attention to the needs and history of names for their focal set of organisms (animals, plants, prokaryotes). The newly released draft of a *BioCode*, presented here, aims to provide a framework for the existing Codes to grow towards each other in the future and promote common rules to minimise confusion among names of any organism. It is a collaborative effort by representatives of each major organismal Code. It is, in this respect, a largely forward-looking document.

The draft *BioCode* has no effect on the provisions of the current zoological Code and should comply with the other type-based (or in draft *BioCode* terminology, ‘special’) Codes as well. The intention is that like the existing Codes the *BioCode* will form a voluntary code of practice, and that it will supplement, not replace, them. Authors of new animal names are reminded that this draft *BioCode* has no current official standing, and new nomenclatural acts must still conform to the ICZN. The implementation of the *BioCode* remains to be worked out in future drafts and through publication of the ‘Annexes’. The mechanism for adoption of the *BioCode* is similarly to be determined in the future. David Hawksworth suggests, in his introduction below, that *BioCode* ‘provisions can be adopted at the appropriate time for any particular group of organism, at any rank or range of ranks. Such adoption is to be determined by the appropriately mandated international body if and when the necessary structures exist and are operational.’ We look forward to comments from the community of zoologists on how we can best implement zoological participation in the *BioCode*.

Your input in improving the draft will be welcomed. We draw your attention to the following areas of the draft *BioCode*:

- The principle of coordination to be extended to botanical and bacterial nomenclature, *Draft BioCode* Art. 3.3, in part requiring the introduction of additional ranks (profamily between family and subfamily, Art. 24.1 & Note 1, progenus between genus and subgenus, Art. 26.2 & Notes, prospecies between species and subspecies, Art. 28.3 & Notes).
- Registration of new names and nomenclatural acts, Art. 5.2, 12 & 13.
- Required common languages for description, English or Latin, Art. 7.
- Prevention of inter-regnal homonymy for new names, Art. 18.2.
- ‘Adopted Lists’ or Lists of Available Names, Art. 20.
- Flexibility in use of suprageneric terminations for ambiregnal organismal names, Art. 23 Note 2, 24 Note 2, 25 Note 1.

We will make a platform for comments, formatted such that discussion on each Article is continuous, on the ICZN website at this address: <http://iczn.org/biocode>.

Ellinor Michel
Executive Secretary, ICZN

Introducing the *Draft BioCode* (2011)

David L Hawksworth

*Chair, IUBS/IUMS International Committee on Bionomenclature;
Departamento de Biología Vegetal II, Facultad de Farmacia, Universidad
Complutense de Madrid, Plaza Ramón y Cajal, Madrid 28040, Spain;
and Department of Botany, Natural History Museum, Cromwell Road,
London SW7 5BD, U.K. (e-mail: d.hawksworth@nhm.ac.uk)*

As information on the world's biota becomes increasingly integrated across different groups of organisms, from bacteria and fungi to animals and plants, there is a concomitant rising need for a consistent and harmonised approach to the regulation of scientific names. The *BioCode* initiative represents a concerted effort, by biologists intimately involved in the operation of the current system of separate codes, to devise a unified approach to the future naming of organisms of all kinds. This need has become pressing in view of common issues that the separate organismal type-based codes now have to address, consequent on the rapid changes taking place in global informatics, database architecture, molecular systematics and ecology, and electronic publication.

The *Draft BioCode* (2011) is most appropriately viewed as a framework overarching the practices of the current series of codes, but which also addresses ways in which some of the key issues of current concern in systematics could be handled by all codes, for example the registration of new names and electronic publication. In addition, it has been drawn up so that its provisions can be adopted at the appropriate time for any particular group of organisms, at any rank or range of ranks. Such adoption is to be determined by the appropriately mandated international body if and when the necessary structures exist and are operational.

The advantages of moving towards a more harmonised system were realised at a Systematics Association-sponsored symposium held at the Third International Congress of Systematic and Evolutionary Biology (ICSEB III) in Brighton (U.K.) in 1985. IUBS then established a standing committee on biological nomenclature after debates at the 22nd IUBS General Assembly in Budapest (Hungary) later that year. In 1988, following discussions during the XIV International Botanical Congress in Berlin (Germany) in 1987, and with the support of IUBS and the International Association for Plant Taxonomy (IAPT), an *ad hoc* group including representatives of all five representatives of the committees in charge of the five current codes met in Kew (U.K.) to consider a common approach towards the protection of names then in use. Following from the report of that meeting, further meetings of the *ad hoc* group, and discussions and debates at the 23rd IUBS General Assembly in Canberra (Australia) in 1988 and ICSEB IV at College Park (Maryland, U.S.A) in 1989, led to a major conference on *Improving the Stability of Names* being convened in Kew in 1991 – with the support of IUBS, IAPT and the Systematics Association. Later in 1991, the 24th IUBS General Assembly, meeting in Amsterdam (Netherlands), passed a resolution to encourage harmonisation between the various codes. An exploratory meeting on harmonisation between the codes was then convened in Egham (U.K.) in 1994; this was held under the auspices of IUBS, IUMS (International Union of Microbiological Societies) and IAPT with support from

CAB International, the Linnean Society of London, and the Royal Society of London. It set an agenda for future action in biological nomenclature, including the establishment of what became the IUBS/IUMS International Committee on Bio-nomenclature (ICB) following the 25th IUBS General Assembly in Paris (France) later in 1994. The ICB addressed several issues of concern when it met in Egham the following year, but also generated a first draft of a prospective *International code of bionomenclature*. That document was developed and presented at ICSEB V in Budapest in 1996, as the *Draft BioCode: the prospective international rules for the scientific naming of organisms*. Having taken note of debates during that congress, the ICB met again at Egham in 1997 and then issued a revision, the *Draft BioCode* (1997).

The *BioCode* was, from the first, seen as something to deal with names proposed in the future, while the existing separate codes continued to deal with those of the past. It was envisaged as operating in parallel while agreed lists of names were developed by, for example, phylum, order or family. Whereas some minor changes have been effected in the existing codes towards improved harmonisation since that time, an agreed list of names and a mechanism for compulsory registration of new names continued to be available only in bacteriology. However, as the 21st century commenced, the rapid evolution of databases meant that the production of lists on a group basis became more practical, and a need for a timely and low-cost system of cataloguing newly proposed names emerged in botany, mycology and zoology. In addition, changing classifications as a result of molecular phylogenetic studies meant that the problems of groups potentially being treated under different codes, or meriting transfer from one to another, grew. Against this background, the ICB organised a meeting to consider the issues surrounding the mandatory registration of new scientific names in the rooms of the Linnean Society of London (U.K.) in 2007, and a workshop on *Tailoring Biological Nomenclature to User Needs* at the Natural History Museum in London in 2009. As a consequence of these discussions, the 30th IUBS General Assembly in Cape Town (South Africa) later that year decided that it was time to revisit the prospect of a *BioCode*. The ICB then convened a workshop at the Botanischer Garten und Botanischer Museum in Berlin in October 2010 to produce an update of the *Draft BioCode* (1997) to allow for subsequent developments in the different codes, and also the possibilities afforded by new technologies. That document, the *Draft BioCode* (2011), is presented here as a basis for further consideration during BioSystematics Berlin 2011 (which incorporates ICSEB VII).

In presenting the *Draft BioCode* (2011), I wish to thank the past and current members of the ICB, and also others that have participated in the various workshops, debates and symposia on this issue over the last 25 years. Their sustained and insightful comments are now crystallising into a vision for a pragmatic nomenclatural system, tailored to the electronic and molecular age, and in which biologists, as a whole, can have confidence.

Draft BioCode (2011): Principles and Rules Regulating the Naming of Organisms

Prepared and edited by *W. Greuter*¹, *G. Garrity*², *D.L. Hawksworth*³, *R. Jahn*⁴, *P. Kirk*⁵, *S. Knapp*⁶, *J. McNeill*⁷, *E. Michel*⁸, *D.J. Patterson*⁹, *R. Pyle*¹⁰ & *B.J. Tindall*¹¹ on behalf of the IUBS/IUMS International Committee for Bionomenclature (ICB).

¹*Herbarium Mediterraneum, clo Orto Botanico, Via Lincoln 2/A, I-90123 Palermo, Italy; and Botanischer Garten & Botanisches Museum Berlin-Dahlem, Free University of Berlin, Königin-Luise-Str. 6–8, D-14195 Berlin, Germany (e-mail: w.greuter@bgbm.org)*

²*6162 Biomedical & Physical Sciences Bldg., Michigan State University, East Lansing, MI 48824–4320, U.S.A. (e-mail: garrity@msu.edu)*

³*Departamento de Biología Vegetal II, Facultad de Farmacia, Universidad Complutense de Madrid, Plaza Ramón y Cajal, Madrid 28040, Spain and Department of Botany, Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: d.hawksworth@nhm.ac.uk)*

⁴*Botanischer Garten & Botanisches Museum Berlin-Dahlem, Free University of Berlin, Königin-Luise-Str. 6–8, D-14195 Berlin, Germany (e-mail: r.jahn@bgbm.org)*

⁵*CAB International, Bakeham Lane, Egham, Surrey TW20 9TY, U.K. (e-mail: p.kirk@cabi.org)*

⁶*Department of Botany, Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: s.knapp@nhm.ac.uk)*

⁷*Royal Botanic Garden, 20A Inverleith Row, Edinburgh, EH3 5LR, Scotland, U.K. (e-mail: j.mcneill@rbge.ac.uk)*

⁸*ICZN Secretariat, Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn-em@nhm.ac.uk)*

⁹*Biodiversity Informatics, Marine Biological Laboratory, Woods Hole, MA 02543, U.S.A. (e-mail: dpatterson@mbi.edu)*

¹⁰*Department of Natural Sciences, Bishop Museum, 1525 Bernice St., Honolulu, HI 96817, U.S.A. (e-mail: deepreef@bishopmuseum.org)*

¹¹*Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Mascheroder Weg 1b, D-38124 Braunschweig, Germany (e-mail: bti@dsmz.de)*

This work is also published in *Bionomina* 1 (2011) and *Taxon* 60 (2011) to ensure wide dissemination among systematists as a whole.

PREAMBLE

1. Biology requires a precise, coherent and simple system for the naming of organisms used internationally, dealing both with the nomenclatural terms and with the scientific names that are applied to the individual taxonomic groups of organisms (*taxa*, singular *taxon*).

2. The provisions of this *BioCode* shall apply to names of all kinds of organisms, whether eukaryotic or prokaryotic, fossil or non-fossil, and of fossil traces of organism (ichnotaxa), that are established (i.e. validly published or made available) and shall govern the choice when names compete among themselves or with earlier names. They shall also, and without limitation of date, provide for the establishment of co-ordinate names within rank groups, for the protection of names, as well as for their correct form.

3. Established names of organisms that are not yet covered by Adopted Lists of Protected Names are in all other respects (including their subsequent typification) governed by the *International Code of Nomenclature of Bacteria* (here: 'bacteriological Code'), the *International Code of Botanical Nomenclature* ('botanical Code') or the *International Code of Zoological Nomenclature* ('zoological Code') hereafter jointly called the 'Special Codes', depending on the accepted taxonomic position of their type.

4. Separate rules for organismal nomenclature, contained in the *PhyloCode*, are being established by analogy to those in the Special Codes but are based on different principles. Any names that may be proposed under the *PhyloCode* have no standing under the *BioCode*.

5. Separate rules for virus nomenclature, contained in *The International Code of Virus Classification and Nomenclature* (virological Code) have been established in conformity with Principles I and V of this Code and with the thrust of many of its rules. Because names of virus species do not have the binominal form required under this Code, and names of virus taxa in other recognised ranks have mandatory terminations according to rank, provisions of the *BioCode* proscribing these terminations for non-virus taxa ensure that the names of viruses and other organisms cannot conflict.

6. The nomenclature of cultivated plants follows the provisions of this Code, in so far as these provisions are applicable, but the naming of distinguishable groups of plants whose origin or selection is primarily due to intentional human actions follows the supplementary provisions contained in the *International Code of Nomenclature for Cultivated Plants* ('cultivated plant Code').

7. The nomenclature of infraspecific taxa (pathovars) of plant pathogenic bacteria is regulated by a set of *International Standards for Naming Pathovars of Phytopathogenic Bacteria* ('plant pathogen Standards').

DIVISION I. PRINCIPLES

Principle I

The *BioCode* governs the formation and choice of scientific names of taxa but not the circumscription, position, or rank of the taxa themselves. Nothing in this Code may be construed to restrict the **freedom of taxonomic action**.

Principle II

Scientific nomenclature of organisms builds upon the Linnaean system of binary names (binomina) for species.

Principle III

The application of names of taxa is determined by means of name-bearing types (hereafter referred to as types), although this principle does not apply to certain names at supra-familial ranks (see Art. 23.1(b)).

Principle IV

The nomenclature of a taxon is based upon priority (precedence by date) of publication, although application of this principle is not mandatory at all ranks (Art. 19.7).

Principle V

Each taxon in the family group, genus group or species group with a particular circumscription, position, and rank has only one accepted name, except as may be specified in a *Special Code*.

Principle VI

Scientific names of taxa are treated as Latin, regardless of their derivation.

Principle VII

The name as applied to a taxon is not to be changed without sufficient reason, based either on further taxonomic studies or on the necessity of giving up a name that is contrary to the Rules of nomenclature.

Principle VIII

In the absence of a relevant rule or where the consequences of rules are doubtful, established custom is followed (see also Div. III.5.).

Principle IX

The rules of nomenclature are retroactive, subject to any specified limitations (see also Pre. 2–3).

DIVISION II. RULES**CHAPTER I. TAXA AND RANKS****Article 1**

1.1. Every individual organism is treated as belonging to an indefinite number of taxa of consecutively subordinate rank.

1.2. Taxa normally consist of whole organisms in all their life stages, irrespective of the nature of the corresponding name-bearing types. For practical reasons, in some categories of organisms taxa are recognised and can be named that correspond only to parts of organisms, or to definite stages of their life history, or result from their activity. Such taxa are termed parataxa. This *Code* provides, in Art. 31, for names of parataxa of specified categories.

Article 2

2.1. The primary ranks of taxa in descending sequence are: *kingdom*, *phylum*, *class*, *order*, *family*, *genus*, and *species*.

Article 3

3.1. Secondary ranks of taxa, when required, include in descending sequence: *domain* above kingdom, *tribe* between family and genus, *section* and *series* between genus and species, and *variety* and *form* below species.

3.2. Should an even greater number of ranks of taxa be desired, the terms for these are made by adding the prefixes super-, pro-, or sub- (sub- being below pro-) to non-prefixed terms denoting principal or secondary ranks.

Ex. 1. Superfamilies, progenera or subspecies are permitted but not subprospects or prosubspecies.

3.3. Throughout this *BioCode*, the following rank groups are recognised: ‘supra-familial ranks’ (all ranks above the family group); ‘family-group ranks’ (the ranks of family and profamily); ‘infrafamilial ranks’ (all ranks between family group and genus group); ‘genus-group ranks’ (the ranks of genus and progenus); ‘infrageneric ranks’ (all ranks between genus group and species group); ‘species-group ranks’ (the ranks of species and prospects); and ‘infraspecific ranks’ (any rank below the species group).

Note 1. Further ranks may be intercalated or added, but designations of taxa in such ranks are not governed by this *BioCode*.

Recommendation 3A

3A.1. The establishment of new names of infraspecific taxa is strongly discouraged, except in groups in which they are used traditionally.

CHAPTER II. NAMES (GENERAL PROVISIONS)

SECTION 1. STATUS

Article 4

4.1. Established names are those that comply with the requirements of Art. 7–11 (see also Art. 33.2) or that, prior to the starting date defined in those Articles, were validly published or became available under the relevant *Special Code*.

4.2. In this *Code*, unless otherwise indicated, the word ‘name’ means an established name, whether it be acceptable or unacceptable (see Art. 19).

4.3. Acceptable names are established names that are in accordance with the rules, that is, are neither unacceptable under Art. 18 nor illegitimate under the relevant *Special Code*.

4.4. In the family group, genus group, or species group, the accepted name of a taxon with a particular circumscription, position, and rank is the acceptable name which must be adopted for it under the rules (see Art. 19).

Note 1. In ranks not belonging to the family group, genus group, or species group, any established name of a taxon adopted by a particular author is an accepted name (see Art. 19.7).

4.5. The name of a taxon consisting of the name of a genus combined with one epithet is a binomen, the name of a species combined with a second epithet is a trinomen; binomina or trinomina are combinations.

Recommendation 4A

4A.1 In order to denote a clear distinction between scientific names of organisms and designations in common language, scientific names of all ranks should appear in the same distinctive, and preferably italic, type.

SECTION 2. ESTABLISHMENT

Article 5

5.1. In order to be established, a name must be (a) new, (b) have the form required by Art. 23–31, and (c) comply with the special provisions of Art. 7–11.

5.2. On or after the relevant future date to be determined (Div.III.4), case by case, for the various categories of organisms, names, and nomenclatural acts, any name of a new taxon, replacement name, or new combination, and any nomenclatural act (Art. 16.6, 17.4, 18.8 & 19.5), must be registered in order to be established (see Art. 12).

Note 1. Registration does not in itself grant establishment. Upon request or by oversight, names and nomenclatural acts may be registered even though they fail to fulfil all establishment requirements. In such cases, an apposite note will be added to the registration entry (see Art. 13.1).

Note 2. No previous formal publication is required for registration, nor does such publication affect the date or the form and attributes of a registered name.

Recommendation 5A

5A.1. Authors who submit names or nomenclatural acts for registration that have not previously been formally published should expedite formal publication as soon as possible after registration, and should endeavour to provide a reference to that prospective publication in their registration submission.

5A.2 Authors should register new names and nomenclatural acts on acceptance of the corresponding text for formal publication.

5A.3. In the subsequent formal publication of a new taxon of which the name has already been registered, or of new nomenclatural acts, the registration parameters (number, date) should be mentioned, and the spelling and relevant attributes (e.g. type, validating description) of the name should be given exactly as registered.

Article 6

6.1. The establishment of any family-group name is deemed to automatically establish co-ordinate names at the other ranks of the family-group. The co-ordinate names are formed from the same generic name and have the same authorship and date.

6.2. All subfamily names established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of profamilies (Art. 3.2; see also Art. 24 Note 1).

Note 1. Names of subfamilies established under the botanical or bacteriological *Code* maintain the former subfamily termination *-oideae* (Art. 25.1) and are intermediate in rank between profamily and tribe (Art. 3.2).

6.3. The establishment of any genus-group name is deemed to automatically establish an identical co-ordinate name at the other rank of the genus group. The co-ordinate names have the same type, authorship and date.

6.4. All names of subgenera established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of progenera (Art. 3.2; see also Art. 26 Note 1).

Note 2. Names of subgenera (subgen.) have the same form as those of other infrageneric taxa, for instance, sections (Art. 27), and are intermediate in rank between progenus and section (Art. 3.2).

6.5. The establishment of any species-group name is deemed to automatically establish a co-ordinate name at the other rank of the species group. The co-ordinate names have identical final epithets, the same type, authorship and date.

6.6. All names of subspecies established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of prospecies (Art. 3.2; see also Art. 28 Note 1).

Note 3. Names of subspecies (subsp.) have the same form as those of other infraspecific taxa, for instance, varieties (Art. 29), and are intermediate in rank between prospecies and variety (Art. 3.2).

Article 7

7.1. On or after a future date to be determined (Div. III.4) a name of a new taxon, in order to be established, must be accompanied by a Latin or English description of the taxon, or by a direct and unambiguous bibliographic reference to a previously published Latin or English description that applies to the taxon at a rank belonging to the same rank group (Art. 3.3).

7.2. Art. 7.1 notwithstanding, a direct and unambiguous bibliographic reference to a previously published Latin or English description of an infrafamilial, infrageneric, or infraspecific taxon is sufficient, under the botanical *Code*, to establish a name of a new taxon in the rank of family-group, genus-group, or species-group, respectively, and vice versa (see also Art. 6).

Article 8

8.1. On or after a future date to be determined (Div. III.4) a new combination or a replacement name for a previously established name, in order to be established, must be accompanied by a direct and unambiguous bibliographic reference to its basionym (name-bringing or epithet-bringing synonym) or replaced name, its author and place of original publication.

8.2. In order to be direct and unambiguous, a bibliographic reference must include the page or plate reference (where applicable) and year (in so far as known); for publications with a consecutive pagination, the page reference is a reference to the page or pages on which the basionym was published or on which the protologue is printed, but not to the pagination of the whole publication unless it is coextensive with that of the protologue.

Note 1. When the basionym or replaced name is a name established by registration, citation of that name with its registration parameters (number, date) is a direct and unambiguous reference.

8.3. The basionym or replaced name may be of a different rank from the new combination or replacement name, but only within a single rank group (as defined in Art. 3.3).

8.4. Art. 8.3 notwithstanding, names of infrafamilial, infrageneric, or infraspecific taxa established under the botanical *Code* can serve as basionyms or replaced names for new combinations or replacement names in the ranks of family-group, genus-group, or species-group, respectively, and vice versa (see also Art. 6).

Article 9

9.1. On or after a future date to be determined (Div. III.4) a name of a new taxon of the rank of genus or below, in order to be established, must be accompanied by the

designation of its type (see Art. 14–17). Designation of the type must include one of the words ‘holotype’ (*holotypus*) or ‘type’ (*typus*), or the corresponding abbreviation, and, unless the type is a published illustration, a specification of the institution or collection in which it is conserved.

Article 10

10.1. On or after a future date to be determined (Div. III.4) a name of a new fossil botanical species or subordinate taxon, in order to be established, must be accompanied by an illustration or figure showing diagnostic characters, in addition to the description or diagnosis, or by a bibliographic reference to a previously published illustration or figure. This requirement also applies to names of new non-fossil algal taxa at these ranks.

Recommendation 10A

10A.1 Provision of an illustration or figure showing diagnostic characters is recommended for all new taxa, especially for those of zoological fossils as well as ambiregnal and any microscopic organisms. [Ambiregnal organisms are those that are treated under more than one *Special Code* by different taxonomists].

Article 11

11.1. Only if the corresponding genus or species name is established can the name of a subordinate taxon be established (but see Art. 30.2).

SECTION 3. REGISTRATION

Article 12

12.1. Registration as mandated by Art. 5.2 is effected (a) by submitting a name, with all necessary details (Art. 7–11), or by specifying a nomenclatural act (Art. 16.6, 17.4, 18.8 or 19.5), authored by at least one named person, either in print or in an agreed digital format, to the appropriate Registering Centre (see Annex A and Div. III.8 [The Annexes and Div. III.8 will be prepared at later dates, and are not, therefore, included in this Draft *BioCode*]); and (b), complying with the technical requirements of the registering centre.

12.2. Registration will be granted to all submitted names that fulfil these conditions as well as the requirements of Art. 7–11. The procedures are specified in Annex A.

Note 1. Co-ordinate names within a rank group need not be submitted separately.

12.3. The registering centres are empowered to register non-submitted items placed in the public domain that meet the requirements of Art. 7–11 for establishment. They are entitled to do so when the following conditions obtain: (a) new names and nomenclatural acts are clearly identified as such; (b) the authors are named persons; and (c) there is nothing to indicate that new names and nomenclatural acts are not definitely accepted by their author, nor is there any disclaimer to the effect that they are not to be considered as published for nomenclatural purposes.

12.4. Under Art. 5.2, the date of establishment of a new name or of a nomenclatural act is that of its registration, which is the moment in which the relevant information becomes generally available by being placed on a global electronic communication network by the competent registering centre, or published in the relevant official medium.

Article 13

13.1. Entries of registered names and nomenclatural acts cannot be deleted (but see Art. 13.2). However, factual omissions and errors, particularly those that result in non-establishment, will be mentioned in notes added to the registration entry. Subsequently added notes will be dated. Whenever possible, reference will be made to the actual (prior or subsequent) place and date of establishment.

Ex. 1. When the earlier establishment of a supposedly new combination has been overlooked, the entry is maintained but citation of the actual place of establishment is added.

Ex. 2. If the purported basionym of an intended new combination is not an established name, the entry is maintained with a note on failed establishment of the combination.

Ex. 3. When the earlier publication of a supposedly new type designation has been overlooked, the entry is maintained but a reference to the earlier designation is added, and the previously designated name-bearing type, when it differs, is specified.

SECTION 4. TYPIFICATION**Article 14**

14.1. The application of names of taxa of the rank of superfamily or below, and of those names of taxa in the higher ranks that are ultimately based on generic names, is determined by means of types (name-bearing types). The unit formed by the name and its type is referred to as the nominal taxon.

14.2. A type is that element to which the name of a taxon is permanently attached, whether it be an accepted name or not.

14.3. A new name based on a previously published acceptable name, for instance, as a new combination or as a replacement for an older name (see Art. 8), is typified by the type of the older name.

Article 15

15.1. The nature of types of names of new taxa is as defined in the relevant *Special Code*.

Article 16

16.1. When the name of a species or subordinate taxon has no acceptable designated type, a type may be designated. Designation must comply with the rules in the relevant *Special Code*.

16.2. When no single type was designated for the name of a new taxon, a lectotype may be designated.

16.3. If a type specimen is lost or destroyed, or is unavailable for consultation for an indefinite period of time, a neotype may be designated to serve as type so long as the original type is unavailable or missing.

16.4. When a type specimen contains parts belonging to more than one taxon, a part of it may be designated as type so as to fix the application of the name.

16.5. When a type cannot be critically identified for purposes of the precise application of the name of a taxon, and it is desirable to fix that application, an epitype may be designated. Suitability of a designated epitype may be challenged (see Div. III.9).

16.6. In order to be established, on and after the relevant starting date for mandatory registration (Art. 5.2), type designations as provided for in Art. 16.1–5 must be registered (Art. 5.1; see also Art. 12).

Article 17

17.1. The type of a name of a supraspecific taxon of generic or lower rank is a nominal species.

17.2. The type of a name of a suprageneric taxon the name of which is derived from a generic name is the nominal genus from which it is derived.

17.3. When the name of a supraspecific taxon has no acceptable designated type, a type may be designated. Designation must comply with the rules in the relevant *Special Code*.

17.4. In order to be established, on and after the relevant starting date for mandatory registration (Art. 5.2), type designations as provided for in Art. 17.3 must be registered (Art. 5.1; see also Art. 12).

SECTION 5. HOMONYMY

Article 18

18.1. Homonyms are identically spelled names based on different types. Rank designators are disregarded for the assessment of homonymy, so that names in different ranks can nevertheless be homonyms.

18.2. A family-group, genus-group or species-group name established on or after a future date to be determined (Div. III.3), unless conserved (Art. 21) or otherwise protected, is unacceptable if it is a later homonym, that is, if it, or one of its co-ordinate names, is spelled exactly like a name based on a different type that was previously established for a taxon in the same rank (see also Art. 18.6).

18.3. Two different homonyms may both be acceptable if they were published under different *Special Codes* prior to the date determined in Art. 18.2. However, of different homonyms published under the same *Special Code*, all but the earliest one are unacceptable unless conserved or protected.

Note 1. In the ranks of the species group, a binomen or trinomen that is already established cannot be displaced by transfer of the epithet [Here and elsewhere in this Code, the phrase ‘final epithet’ refers to the last epithet in sequence in any particular combination, in any rank lower than genus] of an earlier acceptable name whose final epithet would otherwise have to be adopted under Art. 19.4. In such cases, the resultant combination would be unacceptable as a later homonym (see also Rec. 18A).

18.4. A name of an infrageneric taxon is unacceptable, irrespective of its date, if it has the generic name as its epithet but is based on a different type (but see Rec. 18B.1).

18.5. A name of an infraspecific taxon is unacceptable, irrespective of its date, if it has the same final epithet as the species name but is based on a different type (but see Rec. 18B.2).

18.6. When two or more species-group names based on different types are so similar that they are likely to be confused (parahomonyms) they are treated as homonyms.

Note 1. This provision does not apply to genus-group names, except as provided by Art. 18.7.

18.7. When it is doubtful whether species-group or genus-group names are parahomonyms (see Div. III.9) they may be submitted to the appropriate committee(s) (Div. III.9) to obtain a binding decision.

18.8. When two or more homonyms have the same date, precedence between them is established in conformity with the relevant *Special Code*. On or after the relevant starting date for mandatory registration (Art. 5.2), any new choice between homonyms of the same date must be registered (Art. 12) in order to take effect.

Recommendation 18A

18A.1. Later homonyms which, being acceptable under the relevant *Special Code*, are in current use should not be abandoned but proposed for conservation (Art. 21).

18A.2. Prior to the date determined in Art. 18.2, authors should refrain from establishing new names that are homonyms of acceptable names established under a different *Special Code*.

18A.3. In choosing between homonyms in ranks where the principle of priority is not mandatory, authors should nevertheless follow that principle, unless the result would be nomenclaturally disruptive and contrary to established tradition.

Recommendation 18B

18B.1. When establishing the name of a new progenus, authors should refrain from using the epithet of a name previously established for an infrageneric taxon of the same genus, based on a different type.

18B.2. When establishing the name of a new proiespecies, authors should refrain from using the epithet of a name previously established for an infraspecific taxon of the same species, based on a different type.

SECTION 6. PRECEDENCE

Article 19

19.1. For purposes of priority the date of a name is either the date attributed to it in an Adopted List of Protected Names (Art. 20) or, for unlisted names established prior to the relevant starting date for mandatory registration (Art. 5.2), the date on which it was validly published or became available under the relevant *Special Code*, or the date on which it was established, on or after that same date, under the *BioCode*. Limitations of priority that under the *Special Codes* affect names in certain groups or of certain categories, even if not provided for in the *BioCode*, still apply.

19.2. Competing names are acceptable names with types that belong to the same taxon. At family-group, genus-group and species-group ranks, the choice between competing names of the same rank is governed by the principle of priority of establishment.

Note 1. Under the principle of co-ordinate status (Art. 6), co-ordinate names in the other rank of the same rank group are automatically established and accordingly take the same date in both ranks of the group.

19.3. For any taxon in one of the ranks of the family or genus group, the accepted name is the earliest acceptable one that competes at that rank, except in cases of limitation of precedence under Art. 20–24, or where Art. 31 applies.

19.4. For any species-group taxon, the accepted name is the combination of the final epithet of the earliest acceptable name that competes at that rank, with the

accepted name of the genus or species to which it is assigned, except (a) in cases of limitation of precedence under Art. 20–24, or (b) if the resulting combination cannot become established under Art. 28.2, or (c) would be unacceptable as a later homonym as defined in Art. 18, or (d) if Art. 31 rules that a different combination be used.

19.5. When, for any taxon of the family group, genus group or species group, a choice is possible between acceptable names of equal date, or between final epithets of acceptable names of equal date, the first such choice to be published before the relevant starting date for mandatory registration (Art. 5.2) in conformity with the relevant *Special Code*, or if there is none, the first registered choice under the *BioCode* (Art. 12) establishes the precedence of the chosen name, and of any acceptable combination with the same type and final epithet at that rank, over the other competing name(s).

19.6. Names of organisms (animals and algae excepted) based on a non-fossil type take precedence over names of the same rank based on a fossil (or subfossil) type (see also Art. 31.2).

19.7. The principle of priority is not mandatory for names of taxa not belonging to the family group, genus group or species group.

Recommendation 19A

19A.1. Authors should follow the principle of priority also when it is not mandatory, unless the result would be nomenclaturally disruptive and contrary to established tradition.

Article 20

20.1. In order to stabilise the nomenclatural status of names in current use, and to prevent their being displaced by names no longer in use, lists of names and their attributes may, after apposite public review, be submitted to the ICB for adoption (see Div. III.9).

Ex. 1. The Approved Lists of Bacterial Names (see Rule 24a of the bacteriological *Code*) are, for all events and purposes, equivalent to the Adopted Lists provided for in the *BioCode*.

Ex. 2. The Lists of Available Names in Zoology (see Art. 79 of the zoological *Code*) are, for all events and purposes, equivalent to the Adopted Lists provided for in the *BioCode*.

Ex. 3. The list of Names in Current Use in the *Trichocomaceae* (fungi) to which special status has been granted by the 1993 International Botanical Congress (Regnum Veg. 128: 13–57. 1993; see the Tokyo edition of the botanical *Code*, p. x) is, for all events and purposes, equivalent to an Adopted List as provided for in the *BioCode*.

20.2. Once a list has been adopted, all listed names and their co-ordinate names are protected. A protected name is treated as if conserved against earlier homonyms and unlisted competing names; it is treated as established in the place and on the date cited in the list; and its type, when listed, its spelling and, if specified, its gender are treated as if conserved.

20.3. Protection can, for individual lists, be restricted with respect to the options set out in Art. 20.2, and particular entries on a list can be exempted from protection. Such restrictions and exceptions are to be specified.

20.4. Once a list has been adopted, entries can be added, modified or removed only by the mechanisms of conservation or suppression of names (Art. 21–23). Specified restrictions and exceptions can be waived or modified only upon recommendation of the appropriate committee.

20.5. An earlier homonym of a protected name does not lose its status of an established name, but the precedence of the two homonyms is inverted by protection.

20.6. When, for a taxon of the family or genus group, two or more protected names compete, Art. 19.3 governs the choice of name (see also Art. 20.9).

20.7. When, for a taxon of the species group, two or more protected names and/or two or more names with the same final epithet and type as a protected name compete, Art. 19.4 governs the choice of name.

20.8. The date of protection does not affect the date of a protected name, which is the date of its establishment (Art. 19.1).

20.9. A name which is neither protected nor has the same type and final epithet as a protected name in the same rank may not be applied to a taxon that includes the type of a protected name in that rank unless the final epithet of the latter cannot be used in the required combination (see Art. 19.4(b-c)).

20.10. Conservation and suppression (Art. 21) override protection.

Article 21

21.1. Conservation or suppression of names, nomenclatural acts or publications can suspend the application of the rules to names of taxa of the family group, genus group and species group. Conservation also permits the amendment of Adopted Protected List of names (Art. 20).

21.2. Provisions for the conservation and suppression of names, and mechanisms for implementing them, are detailed in the *Special Codes* (see Div. III.9).

Article 22

22.1. A name that has been widely and persistently used for a taxon or taxa not including its type is not to be used in a sense that conflicts with current usage unless and until a proposal to deal with it under Art. 21 has been submitted and rejected.

CHAPTER III. RANK GROUPS AND THEIR NAMES

SECTION 1. TAXA ABOVE THE RANK OF FAMILY

Article 23

23.1. Names of taxa above the rank of family are treated as nouns in the plural and are written with a capital initial letter. They may be either (a) typified names (see Art. 14.1) that are formed by adding a termination denoting their rank to the genitive singular stem of a generic name, or exceptionally to the whole name; or (b) typeless ('descriptive') names that are formed differently, apply to taxa defined by circumscription, and may be used unchanged at different ranks.

23.2. For typified names, the name of a subphylum that includes the type of the accepted name of a phylum, the name of a subclass that includes the type of the accepted name of a class, or the name of a suborder that includes the type of the accepted name of an order, are to be based on the same type.

23.3. The typified name of a phylum or subphylum is formed from the same generic name as an acceptable name of an included class. The phylum name termination is

-mycota for fungi, *-phyta* for other botanical taxa, and *-zoa* for animals. The subphylum name termination is *-mycotina* for fungi, *-phytina* for other botanical taxa, and *-zoina* for animals.

23.4. The typified name of a class or subclass is formed from the same generic name as an acceptable name of an included order. The class name termination is *-mycetes* for fungi, *-phyceae* for algae, and *-opsida* for other botanical taxa and all animals. The subclass name termination is *-mycetidae* for fungi, *-phycidae* for algae, *-idae* for other botanical taxa, and *-zoidae* for animals.

23.5. The typified name of an order, suborder, or superfamily is formed from the same generic name as an acceptable name of an included family. For all groups, the order name termination is *-ales*, the suborder name termination *-ineae*, and the superfamily name termination *-oidea*.

23.6. The name of a taxon above the rank of family may not have the termination *-virinae*, *-virales*, or *-viridae*, because these terminations are reserved for the names of viral taxa (see Pre. 4).

Note 1. Names of taxa above the rank of family that do not conform to the standards set out in Art. 23.3–23.6 are acceptable as descriptive names (Art. 23.1(b)).

23.7. When a typified suprafamilial name is published with a Latin termination not agreeing with the provisions of this Article, the termination is changed to accord with it, but the name retains its authorship and date.

Note 2. For suprafamilial names of ambiregnal taxa (Rec. 10A, footnote), the alternative use of the terminations *-mycota* or *-phyta* and *-zoa* (for phyla), *-mycotina* or *-phytina* and *-zoina* (for subphyla), *-mycetes* or *-phyceae* and *-opsida* (for classes), *-mycetidae* or *-phycidae* and *-zoidae* (for subclasses) is authorised, irrespective of the *Special Code* otherwise used by a given author.

Recommendation 23A

23A.1. The terminations provided in Art. 23.3–23.5 should not be used in typeless, descriptive names of any rank above family.

SECTION 2. FAMILY-GROUP TAXA AND INFRAFAMILIAL TAXA

Article 24

24.1. Family-group names are treated as nouns in the plural and are written with a capital initial letter. They are formed by adding a termination denoting rank to the genitive singular stem of a generic name, or to the whole name if necessary to avoid homonymy.

The family name termination is *-aceae* for all botanical and bacteriological taxa, *-idae* for zoological taxa.

The profamily name termination is *-idieae* for all botanical and bacteriological taxa, *-inae* for zoological taxa.

Note 1. Names of subfamilies established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of profamilies (Art. 6.2). For practical purposes, subfamily and profamily are, for these names, treated as one and the same rank. However, names of subfamilies established under the botanical or bacteriological *Code* are not equivalent to names of profamilies and remain outside the family-group ranks.

24.2. The name of a family may not have the termination *-viridae*, and the name of a profamily may not have the termination *-virinae*, because these terminations are reserved for the names of viral taxa (see Pre. 4).

24.3. When a name is published with a Latin termination not agreeing with the provisions of this Article, the termination is changed to accord with it, but the name retains its authorship and date.

Note 2. For family-group names of ambiregnal taxa (Rec. 10A, footnote), the alternative use of the terminations *-aceae* and *-idae* (for families), *-idieae* and *-inae* (for profamilies) is authorised, irrespective of the *Special Code* otherwise used by a given author.

Article 25

25.1 The name of an infrafamilial taxon is a noun in the plural and is written with a capital initial letter. It is formed in the same way as a name of a family-group taxon, but by adding a different termination to denote rank:

The subfamily name termination is *-oideae* for all botanical and bacteriological taxa, *-inae* for zoological taxa.

The tribe name termination is *-eae* for all botanical and bacteriological taxa, *-ini* for zoological taxa.

The subtribe name termination is *-inae* for all botanical and bacteriological taxa, *-ina* for zoological taxa.

25.2. The name of an infrafamilial taxon that includes the type of the accepted name of the family is to be based on the same type as the family name.

25.3. The name of a subtribe may not have the termination *-virinae*, which is reserved for the names of viral taxa (see Pre. 4).

25.4. When a name is published with a Latin termination not agreeing with the provisions of this Article, the termination is changed to accord with it, but the name retains its authorship and date.

Note 1. For infrafamilial names of ambiregnal taxa (Rec. 10A, footnote), the alternative use of the terminations *-oideae* and *-inae* (for subfamilies), *-eae* and *-ini* (for tribes), *-inae* and *-ina* (for subtribes) is authorised, irrespective of the *Special Code* otherwise used by a given author.

SECTION 3. GENUS-GROUP TAXA AND INFRAGENERIC TAXA

Article 26

26.1. The name of a genus is a noun in the singular, or a single word treated as such, and is written with a capital initial letter. It may not have the termination *-virus*, which is reserved for the names of viral genera (see Pre. 4).

26.2. The name of an progenus has the same form as a generic name and stands on its own. However, it may not be used as the first term in a binomen or trinomen. It may be interpolated in parentheses between the terms of a binomen, optionally preceded by the rank designator 'progenus' (progen.), but is not for nomenclatural purposes a part of that binomen.

Note 1. Names of subgenera established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of progenera (Art. 6.4). For practical purposes, subgenus and progenus are, for these names, treated as one and

the same rank. However, names of subgenera established under the botanical or bacteriological *Code* are not equivalent to names of progenera and remain outside the genus-group ranks.

Note 2. Under Art. 1.1 every progenus is considered to belong to a given genus, but this affiliation is not reflected in its name. Transfer of a progenus from one genus to another does not therefore require a nomenclatural act.

Article 27

27.1. The name of an infrageneric taxon (subgenus, section, subsection, series or subseries) is a combination of a generic name and an epithet, the two being connected by the term denoting the rank. The epithet is either of the same form as a generic name, or a plural adjective. It is written with a capital initial letter. For practical purposes the generic name may be omitted in citation.

27.2. Adjectival epithets agree in gender with the generic name. Errors in inflection are to be corrected, but the name retains its authorship and date.

27.3. The name of an infrageneric taxon that includes the type of the accepted name of the genus is to repeat the generic name unchanged as its epithet. Such names are termed autonyms.

27.4. The epithet in the name of an infrageneric taxon may not repeat unchanged the accepted name of the genus to which the taxon is assigned unless the two names have the same type.

SECTION 4. SPECIES-GROUP TAXA AND INFRASPECIFIC TAXA

Article 28

28.1. The name of a species consists of a generic name followed by a single word as specific epithet. The epithet may have the form of an adjective, a noun in the genitive, or a word in apposition; it is written with a lower-case initial letter.

28.2. In a name of a botanical taxon, ambiregnal taxa (Rec. 10A, footnote) excepted, the specific epithet may not exactly repeat the generic name.

28.3. A name of a prospecies consists of the name of the species followed by a final epithet having the same form as a specific epithet.

Note 1. Names of subspecies established under the zoological *Code* are, under the *BioCode*, treated as simultaneously established names of prospecies (Art. 6.6). For practical purposes, subspecies and prospecies are, for these names, treated as one and the same rank. However, names of subspecies established under the botanical or bacteriological *Code* are not equivalent to names of prospecies and remain outside the species-group ranks.

Note 2. Insertion of the rank-denoting term 'prospecies' (prosp.) between the binomen and the final epithet is unnecessary.

28.4. In a species-group name, the final epithet, when adjectival in form and not used as a noun, agrees grammatically with the generic name. Errors in inflection are to be corrected, but the name retains its authorship and date.

Article 29

29.1. The name of an infraspecific taxon is a combination of the name of a species and a final epithet, both being connected by a rank-denoting term. The epithet has the same form as a species-group epithet. Art. 28.4 applies by analogy.

29.2. The name of an infraspecific taxon that includes the type of the accepted name of the species is to repeat the specific epithet unchanged as its epithet. Such names are termed autonyms.

29.3. The final epithet in the name of an infraspecific taxon may not repeat unchanged the epithet of the accepted name of the species to which the taxon is assigned unless the two names have the same type.

CHAPTER IV. PROVISIONS FOR SPECIAL GROUPS

Article 30

30.1. Names for hybrids between different taxa of specific or lower rank, including their progeny, are provided for in the botanical *Code*. Except for some special rules, the nomenclature of these hybrids follows the same principles as that of non-hybrid taxa.

Note 1. The zoological and bacteriological *Codes* do not provide for the naming of hybrids.

30.2. Designations of hybrid taxa in supraspecific ranks that equivalent to condensed formulae, or have condensed formulae as their epithets, and are determined by a statement of parentage under the botanical *Code* (Art. H7 & H9), are not established names under the *BioCode*. However, Art. 11 notwithstanding, names of species placed under such designations retain their status of established names under the *BioCode*.

Note 2. Distinguishable groups of cultivated plants and fungi, whose origin or selection is primarily due to the intentional actions of mankind (e.g., cultivars and cultivar-groups), are not covered by this *Code*, but are denominated under the provisions of the *International code of nomenclature for cultivated plants*.

Article 31

31.1. Names based on any part of an organism or portion of its life history are treated as applicable to the whole organism and compete for precedence as provided for in Art. 19–24, unless the relevant *Special Code* provides otherwise.

31.2. Fossil non-algal botanical taxa are parataxa, which for nomenclatural purposes comprise only those parts, life-history stages, or preservation states of organisms that are represented by the corresponding name-bearing types.

Note 1. When a name, under the relevant *Special Code*, applies only to that part of an organism or portion of its life history represented by its type, it is considered as the name of a parataxon.

Note 2. The botanical *Code* currently provides for parataxa of certain groups of fungi with a pleomorphic life-cycle and of plant fossils. The zoological *Code* provides for taxa for the fossilised work of organisms (ichnotaxa).

CHAPTER V. ORTHOGRAPHY AND GENDER OF NAMES

Article 32

32.1. For the purpose of the *BioCode*, orthographical variants are defined as the various spelling, compounding, and inflectional forms of a name or its epithet (including typographical errors), only one type being involved. Confusingly similar names based on the same type are also treated as orthographical variants.

Note 1. For confusingly similar names based on different types, see Art. 18.6 and 18.7.

32.2. Every established name is deemed to have a single correct orthography. Its variants are treated as correctable errors. The correctability of orthographical variants of names established prior to a future date to be determined (Div.III.3) is specified in the relevant *Special Codes*. The corresponding provisions remain applicable under the *BioCode*, complemented by those of Art. 33 (see also Art. 20.2 and 21.2).

32.3. Correctable orthographical variants of a name are to be corrected to the established form of that name. Whenever such a variant appears in print, it is to be treated as if it were printed in its corrected form.

Article 33

33.1. The original spelling of a name or epithet is to be retained, except for the correction of typographical or orthographical errors, the standardisation of terminations required by Art. 23.7, 24.3, 25.4, 27.2, 28.4, and 29.1 (see also Art. 32), and the corrections provided for by the relevant *Special Code*.

Note 1. For names established on or after the relevant starting date for mandatory registration (Art. 5.2), the words ‘original spelling’ in this Article mean the spelling employed when the name is submitted for registration. Any corrections and standardisations required under Art. 33.1 are made during the registration process.

Article 34

34.1. A generic name is treated as a noun with either masculine or feminine or neuter gender. Gender is established on the basis of classical Latin and Greek grammar, when applicable, and by subsequent biological usage (see also Annex B). In case of doubt, the gender assigned by the author of the name or, failing this, by the first subsequent author to assign a gender to the name, is accepted (see also Art. 20.2, 21.2, and Annex B).

34.2. Compound generic names take the gender of the last word in the nominative case in the compound. The most usual words used in compounding generic names, together with their gender, are listed in Annex B.

34.3. The gender of generic names often depends on their termination. For those terminations for which a particular gender is defined in the *Special Codes*, that gender must be accepted. The most usual terminations used in forming generic names, together with their gender, are listed in Annex B (see also Art. 20.2 and 21.2).

34.4. When a new generic name is submitted for registration without indication of gender, or with an indication of gender that is contrary to the *Codes*, the gender is assigned or corrected during registration.

CHAPTER VI. AUTHORSHIP OF NAMES

Article 35

35.1. In publications dealing with the taxonomy and nomenclature of organisms, it may be desirable to cite the name of the author(s) who established the name concerned and the year of its establishment. For author citation, the rules of the relevant *special Code* apply, in addition to the provisions in the present Article.

35.2. When a name of a taxon is jointly authored by two persons, both author names are cited, linked with an ampersand (&) or the word '*et*'. When a name of a taxon has three or more authors, in subsequent citations only the first needs to be cited, followed by the phrase '& al.' (or *et al.*).

35.3. When a taxon of rank lower than progenus is altered in rank, or when its epithet is transferred to another genus or species, the names of the authors of the basionym (name- or epithet-bringing acceptable name), and optionally its year, are placed in parentheses. After the parenthesis, the authorship and year of the alteration or transfer may be added.

Recommendation 35A

35A.1. Inclusion of the name of persons other than the actual author or authors, linked to the latter by the particle 'ex', is provided for in the *Special Codes*. As the prescribed order of names differs between the *Codes*, so that confusion may result, this practice is discouraged under the *BioCode*.

35A.2. Author citations should be used sparingly in publications dealing with the taxonomy and nomenclature of organisms, and should be omitted in other publications unless they are necessary to avoid confusion.

DIVISION III. AUTHORITY

1. The *BioCode* is established under the joint authority of the International Union of Biological Sciences (IUBS) and of the International Union of Microbiological Societies (IUMS), to be exercised through an inter-union International Committee on Bionomenclature (ICB).

2. The ICB is a non-governmental organisation (NGO) consisting of up to 20 members, with a balanced representation of the main groups of organisms covered by the *Special Codes*. It operates in close contact with the General Committee on Botanical Nomenclature (GCBN), the International Commission on Zoological Nomenclature (ICZN), the International Committee on Systematic Bacteriology (ICSB), the International Commission for the Nomenclature of Cultivated Plants (ICNCP), and the International Committee on the Taxonomy of Viruses (ICTV).

3. The *BioCode* takes effect upon being approved by an International Congress of Systematic and Evolutionary Biology (ICSEB), or any Congress that may in the future take its place, subject to ratification at the subsequent IUBS General Assembly or appropriate IUMS Divisional Congress.

4. The dates on which individual provisions of the *BioCode* (Art. 5.2, 7.1, 8.1, 9.1, 10.1, 16.6, 17.4, 18.2, 18.8, 32.2) take effect, for any particular purpose or group of organisms, are determined by the ICB, which will ensure that notice of such dates and of any relevant procedures be disseminated world-wide at least one year in advance. The ICB has also power to suspend the effect of any such provision, should this become necessary, and to designate Registration Centres for defined groups of organisms (Art. 12.1; see Div. III.8).

5. The ICB has power to resolve present and future ambiguity concerning the provisions of the *BioCode*. In case of those organisms that have been or still are treated under different *Special Codes* by different workers, it will consult and seek to establish consensus among the specialists in the groups concerned. Based on these consultations, it shall – for nomenclatural purposes only – assign each controversial group of organisms to the jurisdiction of one of the *Special Codes*.

6. The first and future editions of the *BioCode* are published under the auspices of the International Organisation for Systematic and Evolutionary Biology (IOSEB), or any future successor organisation.

7. The ICB has powers to edit future editions of the *BioCode*, and to amend its provisions where necessary. Any proposed change of substance must, however, be subject to public discussion before being approved by an ICSEB, or any Congress that may in the future take its place, and ratified by the subsequent IUBS General Assembly or appropriate IUMS Divisional Congress.

7.1. The ICB will act on the proposals in the light of these opinions, a 60 % majority of voting members being required for the approval of a change, when a quorum of 50 % of members will apply.

7.2. Any adopted change that is not of a retroactive nature will take effect from a date determined by the ICB.

8. The ICB will operate in close contact with the Registering Centres (Annex A), when they exist, and will assist in setting up those that are wanting for a complete coverage of all groups of organisms. It will ensure that the technical requirements defined by each registering centre are compatible with user requirements and the letter and spirit of the *BioCode*.

9. The ICB will not interfere with the activities of the nomenclature committees operating under the authority of the Special *Codes*, and will refrain from setting up similar structures under its own authority unless and until such a committee should cease to function. It will transmit to the pertinent nomenclature committee any request for the conservation or suppression of individual names, publications or nomenclatural acts (Art. 21), and seek its opinion and advice before adopting any list (Art. 20) or acting on any challenge of an epitype designation (Art. 16.5).

The early endeavours by Hugh Edwin Strickland to establish a code for zoological nomenclature in 1842–1843

L.C. Rookmaaker

University Museum of Zoology, University of Cambridge
(e-mail: lcr26@cam.ac.uk)

Abstract. Hugh Edwin Strickland (1811–1853) in 1837 published a preliminary set of 22 rules relating to established nomenclature and providing guidance in the formulation of names. Hoping to make such rules mandatory, he opted to gain the support of the British Association for the Advancement of Science. In September 1841, he drafted a first code to be circulated among scientists at home and abroad to garner support and finalise the terminology. On 11 February 1842, the Council of the British Association appointed a committee to discuss zoological nomenclature. This committee of 16 people met a few times in April 1842 to discuss the text of the rules, resulting in a second draft printed in May 1842. This document was discussed at the annual meeting of the British Association in Manchester on 28 June 1842, without a clear result on the suitability of the rules. Strickland argued to members of Council that his report should be printed in the main section of the annual proceedings, where in fact they appeared in 1843. This was the first general printing of the rules of nomenclature, which later became known as the Strickland Code.

Introduction

In 1842, at the annual conference of the British Association for the Advancement of Science in Manchester, a report was read advocating guidelines to stabilise zoological nomenclature. It was presented by Hugh Strickland on behalf of a small committee and constituted the first steps towards a set of rules, which later became generally known as the Strickland Code for Zoological Nomenclature. This paper traces the genesis, development and outcome of Strickland's endeavours to change the ways in which naturalists dealt with the increasing number of species in the animal kingdom. It is an expansion and revision of the historical information published in Rookmaaker (2010), largely based on a study of primary documents available in the Museum of Zoology, University of Cambridge (UMZC).

Hugh Edwin Strickland (1811–1853) had wide-ranging interests encompassing all branches of natural history including geology, palaeontology and zoology, with emphasis on ornithology. During his relatively short life, cut short by a freak railway accident, Strickland studied in Oxford, toured Asia Minor, helped to start the Ray Society, wrote a book on the extinct dodo, actively participated in the conferences of the British Association for the Advancement of Science (BAAS) and published about 264 papers. In 1845 he married Catherine Dorcas Maule (1825–1888), the second daughter of the famous naturalist and author, Sir William Jardine (1800–1874). They lived at Apperley Court near Deerhurst, Gloucestershire, when Strickland started his career as Deputy Reader in Geology at the University in Oxford in 1850. Strickland

was an active collector especially of birds, both British and foreign. After his sudden death, his life and writings were set out by Jardine (1858).

Strickland's scientific legacy passed to the University of Cambridge in several stages. His collection of birds (about 6006 skins of 3117 species) was donated by his wife Catherine in 1867, his scientific library of over 400 volumes was added in 1875, while his extensive scientific correspondence was presented in 1892. The latter collection, known as the 'Strickland Archive' and preserved in UMZC, contains 3246 items traditionally divided into five sections (Rookmaaker, 2010). References made to these documents below are given in the format 'N-000', with 'N' indicating the section on nomenclature, which has 182 items ranging in date from 1841–1883.

First thoughts on nomenclature

Ornithology ranked high among Strickland's interests. He amassed an impressive collection of local and foreign birds, outstanding in quantity as well as quality. He felt it was imperative that all birds were accurately named and that the specimens were arranged in a logical or natural order. He studied the available literature from around the globe to find the information needed to assist his ongoing task. Like any zoologist studying a particular group of organisms in his time, he found that authors liberally bestowed and altered scientific names, resulting in a bewildering duplication of names and an expanding synonymy. When he read a short note by the unidentified S.D.W. (1834) advocating a change of the name of the 'bullfinch' in favour of 'coalhood', supposedly more descriptive or appropriate, he quickly drafted a reply for the *Magazine of Natural History*. Strickland (1835) emphatically argued against such so-called arbitrary and unlicensed alteration of established names. He wanted names to be unique and unalterable, rather than appropriate, and suggested that 'priority seems to be the universal law for the adoption of specific names' (p. 40). He knew that his personal opinion would remain unheeded unless 'an authorised body could be constituted, to frame a code of laws for naturalists, instead of the present anarchical state of things, in which everyone does that which is right in his own eyes' (p. 37). He expanded these views during the next few years in a series of short papers (Strickland, 1837a, b, 1838a, b), partly in response to critical remarks by William Ogilby (1838), as recently reviewed by McOuat (1996, 2001a) and Dayrat (2010). Strickland (1837b) provided a general set of 22 rules, first relating to established nomenclature stating the right of the discoverer of a species to name it, secondly providing guidance on how to formulate names properly. He then needed to find an established scientific body to formalise these regulations and make them binding for future scientists.

The Proposed Plan of 1841

His first choice was the British Association for the Advancement of Science (BAAS), during that period the most prestigious, influential and national forum for scientists from all disciplines. He was an active participant of their annual meetings from 1837 onwards and served on Council in 1840 and 1841 (BAAS 1842, pp. vii, x). First he needed to discover how much support or opposition he could encounter. Hence he sought advice from William Jardine in July 1841, probably shortly before the BAAS meeting scheduled to take place in Plymouth at the end of the month: 'I have some

thoughts of moving in the Zoological Section at Plymouth for the appointment of a Committee to prepare a set of regulations with the view of establishing a permanent system of zoological nomenclature. I should be glad to have your opinion on the subject. The plan which I propose will not interfere with zoological classification, in which everyone must in the present state of the science be left to please himself” (letter reproduced in Jardine, 1858, p. clxxv; the original is not in the Archive).

Jardine’s response, now lost, must have been favourable. Strickland went to the conference in Plymouth well prepared to launch his appeal and to defend his set of rules. It is not clear if the need to streamline nomenclature was actually discussed during any of the scheduled plenary or sectional meetings in Plymouth. There is no trace of any resolution or grant relating to Strickland’s project either in the official *Report* published in 1842 or in the more current and comprehensive reviews in the *Athenaeum*, the main contemporary news magazine for literary and scientific news. However, Jardine (1858, p. clxxv) recalled that in Plymouth ‘its general necessity [was] acknowledged, and after some opposition it was moved that a Committee be appointed.’ The same course of events might be inferred from a draft in Jardine’s hand (N-088) of a motion carried at the 1841 meeting to appoint a committee. Obviously Jardine and Strickland lobbied among the delegates at the time of the meeting, but from all available evidence it appears unlikely that there was in fact any formal progress in Plymouth. Jardine could have known that his memory was faulty when he wrote his memoir of Strickland’s life in 1858, because the draft of a motion put his name forward to chair the committee (other members proposed were Jenyns, Westwood, Henslow, Ball, Taylor and Strickland). In fact, Jardine never participated in any committee on zoological nomenclature in the 1840s, probably due to his residence being too distant from London.

Apparently undeterred by the lack of a resolution during the BAAS meeting of 1841, Strickland (with the silent encouragement of Jardine) went ahead and drafted a set of rules to govern zoological nomenclature. Dated September 1841, this was printed as a small pamphlet of 15 pages (by Richard and John E. Taylor, Red Lion Court, Fleet Street, London), entitled *Proposed plan for rendering the nomenclature of zoology uniform and permanent* (N-089; fig. 1). Here Strickland explained that ‘it is proposed at a future period to submit the following scheme to the consideration of the British Association for the Advancement of Science. Previously, however, to doing so, it seems desirable to mature the plan as much as possible, by obtaining the opinions of eminent zoologists in various countries . . .’

According to Sclater (1878, pp. 25–27), following a list prepared by Mrs Catherine Strickland, this first draft of the rules was circulated among 213 naturalists and societies, both local and foreign. The Strickland Archive includes a number of lists of those receiving drafts of the rules of nomenclature, respectively with 43 names (N-090 – for first draft, dated September 1841), 186 names (N-154, undated), 38 names (N-155, undated) and 32 names (N-120 – for second draft, May 1842), but their chronology and scope are unknown. Despite these efforts, only eight written replies concerning the contents of this first draft of September 1841 are present in the Strickland Archive, from John O. Westwood (12 October 1841, 22 February 1842), Edward H. Bunbury (1842), William E. Shuckard (1842), John S. Henslow (1 March 1842), Charles Darwin (17 February 1842, cf. Burckhardt & Smith 1985, p. 311), John Richardson (1 March 1842), Leonard Jenyns (16 March 1842), William J.

Broderip (25 April 1842) and Charles Lucien Bonaparte (20 January 1842, cf. Jardine 1858, p. clxxvi).

The Council of the BAAS

With most responses supportive and agreeable to the wording of the text, Strickland decided to move ahead and prepare for the next annual BAAS meeting. On 22 December 1841 Strickland enquired from the General Secretaries of the BAAS (Roderick Murchison and Edward Sabine) if the Council had the power to appoint a committee, which could then prepare a report to be discussed at the general meeting, thereby gaining a year in the proceedings (N-093). Sabine replied on 24 December that Council would not object as long as Strickland could provide a list of people willing to be part of this new committee (N-095). During the next few months therefore, Strickland circulated his *Proposed Plan* of September 1841 and asked a number of scientists if they would be willing to participate. References to the formation of the committee were found in letters from Henslow, Westwood, Richardson, Broderip and Jenyns written in the first months of 1842.

When the Council met again in London on 11 February 1842, Strickland was prepared and obtained permission to continue his work. Sabine reported in the minutes of this meeting that ‘With a view of securing early attention to an important subject, the Council requested the following Gentlemen, who were represented as willing to set together for the purpose to consider if the rules by which the nomenclature of Zoology might be established on a uniform and permanent basis, and to report thereon to Section D, at the meeting at Manchester: – Mr. Darwin, Prof. Henslow, Rev. N. Jenyns, Mr. Ogilby, Mr. J. Phillips, Dr. Richardson, Mr. Strickland reporter, Mr. Westwood’ (Minutes read to the BAAS meeting in Manchester on 22 June as reported in the *Athenaeum* of 25 June 1842; cf. also BAAS 1843, pp. 105–106).

This committee first met on 28 April 1842 in the rooms of the Zoological Society, 57 Pall Mall (N-112). It was decided to co-opt another five members to the committee, to make a total of 13, adding Bell, Broderip, Smith, Waterhouse and Yarrell. The last named acted as chairman, while Strickland remained the reporter. In the second meeting of the committee, held a week later on 5 May 1842 at Yarrell’s house in London, the text of the first draft was discussed and revised. Only five committee members could be present at the time (Yarrell, Ogilby, Waterhouse, Westwood, Strickland, see N-113), and another three members were invited to join: Owen, Shuckard and Whewell, making a total of 16 (Table 1).

A second draft of the rules was printed in May 1842, again by Taylor in London, entitled *Proposed Report of the Committee on Zoological Nomenclature. For the use of the members of the Committee* (16 pages, N-119; fig. 2). This second printed pamphlet was distributed to at least 32 people (N-120). Comments were received from 12 persons, i.e. William E. Shuckard (24 June 1842), Charles Darwin (31 May 1842, cf. Burckhardt & Smith 1985, p. 320), Leonard Jenyns (26 May 1842), William J. Broderip (5 May 1842, 17 August 1842), Robert Ball (2 May 1842), William Buckland (30 May 1842), Alexander Keyserling (June 1842), William Thompson (6 June 1842), John Phillips (9 June 1842), George R. Waterhouse (12 June 1842), Louis Agassiz (18 June 1842, cf. Jardine 1858, pp. clxxix–clxxxvi) and James Sowerby (29 June 1842).

Table 1. Persons associated with the committees of zoological nomenclature (alphabetical order), 1841–1843

	1841 July Proposed draft	1842 Feb Council BAAS	1842 Apr 28 Committee	1842 May 5 Committee	1842 June Meeting BAAS	1843 Report signatories
Ball, Robert, 1802–1857	x					
Bell, Thomas, 1792–1880			x	x		
Broderip, William John, 1789–1859			x	x	x	x
Darwin, Charles Robert, 1809–1882		x	x	x	x	x
Henslow, John Stevens, 1796–1861	x	x	x	x		
Jardine, William, 1800–1874	x					
Jenyns, Leonard, 1800–1893	x	x	x	x	x	x
Ogilby, William, 1808–1873		x	x	x		
Owen, Richard, 1804–1892						
Phillips, John, 1800–1874		x	x	x	x	x
Richardson, John, 1787–1865		x	x	x	x	x
Shuckard, William Edward, 1802–1868				x		x
Smith, Andrew, 1797–1872				x		
Strickland, High Edwin, 1811–1853			x	x	x	x
Taylor, Richard, 1781–1858	x	x	x	x		
Waterhouse, George Robert, 1810–1888	x					
Westwood, John Obadiah, 1805–1893		x	x	x	x	x
Whewell, William, 1794–1866				x		
Yarrell, William, 1784–1856			x	x		x

The Manchester BAAS meeting in 1842

The next major step was to present the findings of the Committee to the scientists assembled at the BAAS meeting in Manchester in June 1842. The meetings of the BAAS were usually attended by close to a thousand scientists. This required a rigid structure of the proceedings, where reports and papers were read either to the general assembly or to smaller groups called sections. Section D was set aside for botany and zoology. The course of the proceedings of the conference, which lasted from 22 June to 29 June 1842, is best followed, as was usual for those unable to attend, in the accounts supplied by a reporter of the *Athenaeum* (1842). During the general assembly on the 22nd, Sabine as secretary read the minutes of Council, which included the appointment of the committee on zoological nomenclature earlier in the year.

In the meeting of Section D on Tuesday 28 June, Strickland had a chance to read the committee's report, which 'was followed by a discussion on the propriety of printing it in the next volume of the *Transactions* of the Association, as it contained so much that was only matter of opinion, and as time had not been afforded for collecting generally the opinions of zoologists on the subject. The question was eventually referred to the committee [of the Section], as a matter of business' (*Athenaeum*, 1842, p. 690). Jardine (1858, p. cxiii) provided a more personal view of the discussions: 'after being read and explained, as far as time and circumstances would allow, it encountered an opposition that was scarcely expected, couched in a spirit of prejudice, and almost jealous animosity, which was discreditable to the discontents, no matter what their opinions might be. But in all this, the opposition never assumed a definite form; and it is remarkable that among all the correspondence, and in all the discussions, we have scarcely a dissentient voice on the general question, and that the objections and criticisms lay almost entirely in the impropriety of making such radical changes as those proposed appeared to be, and in the difficulty of getting the 'plan' worked out and adopted. Some modern inventors of names felt sorely the criticism of their views and compositions, which many of the clauses exposed; and although no reference was made individually, or possibly could have been allowed in a report of the kind, and sanctioned by such authority, yet oversensitive minds took many of the clauses as aimed at themselves, hence the almost acrimony of some of the observations in the Manchester discussion. But these very circumstances caused their fall, and prevented any distinct motion being made for either censure or delay; and the report, after being well thrashed, was left in the hands of the Committee.' It appears that John Edward Gray (1800–1875) of the British Museum was one of the more prominent people opposed to the introduction of the rules (McOuat, 2001b).

The issue had already taken up too much time of the conference to be given a further hearing. The four members of the committee present in Manchester had in fact prepared a final version of their report ready for final consideration, but they did not get a further chance to present this (N-134: Strickland to Waterhouse, 11 July 1842). On the final day, Wednesday 29 June 1842, the committee of Section D resolved (a motion moved by Richardson and seconded by Owen), 'that the Committee of the Section of Zoology and Botany have too little time during the Meeting of the Association to discuss a Report on Nomenclature, and therefore remit to the special Committee appointed to draw up the Report, to present it on

their own responsibility' (Strickland, 1843a, p. 106). At the same time, a grant was provided in order 'that Mr. H.E. Strickland, Mr. C. Darwin, Professor Henslow, Rev. L. Jenyns, Mr. J. Phillips, Dr. Richardson, Mr. J.O. Westwood, Professor Owen, Mr. Broderip, be a Committee for printing and circulating their Report on Zoological Nomenclature, with the sum of 10 £ at their disposal for the purpose' (BAAS 1843, pp. xx, xxiii).

The first printing of the *Rules*

The reception of the propositions on zoological nomenclature at the Manchester meeting was rather less enthusiastic and supportive than Strickland would have wished. The reporter of the *Athenaeum* even mentioned that it was a 'personal opinion', which was exactly the impression that Strickland so emphatically tried to avoid. He could publish his views in any of the natural history journals at the time, but the rules needed the backing of a scientific organisation to have any chance of succeeding in stabilising nomenclature. He had persuaded the Council of the BAAS to appoint a committee of eminent scientists, who revised and lend credence to the text of the propositions. He was not now about to lose the momentum, knowing that otherwise the proposals would not receive a second hearing.

After the BAAS Council had met again in early August 1842, Strickland heard through John Phillips that it was the intention to print the 'rules' in the proceedings of section D, rather than in those of the plenary meetings. All *Reports* of the BAAS meetings were divided into two parts, the first with the general contents presented by the Council, followed by the second with papers presented to the sections and submitted under the auspices of the sectional officers. The distinction is trivial in hindsight, but Strickland knew that it would substantially increase the status of the 'rules' if readers would have the impression that it had the backing of the BAAS as an institution. As during the 1842 conference the reading of the 'rules' had been referred to a session of section D, Strickland could be reasonably sure of publication, but not necessarily in the main section. Hence, he wrote to Sabine (N-138) and Lankester (N-141) in early August to clarify the issue. Sabine, as the executive of the BAAS Council, explained in a letter of 17 August (N-139) that Section D failed to pass a special resolution to recommend the printing of the 'rules' in the proceedings, hence the Council's dilemma. Lankester, in his reply of 20 August (N-142), stated that Section D had meant to allow printing of the 'rules' as long as it was done under the sole responsibility of the authors.

Strickland then wrote back to Sabine (20 August 1842, N-146) that he had never heard of a distinct resolution by one of the sections to print a report. Besides, a grant of £10 had been approved to ensure circulation of extra copies of the 'rules' after it had been printed in the proceedings. Sabine, who knew the rules of the BAAS obviously better than anybody else, further elucidated (23 August, N-147) that a special resolution was necessary because the 'rules' were not the result of an action by the Section, rather were presented by a committee appointed by Council. However, if there would be a preface to state that the responsibility of the contents of the 'rules' rested with the authors rather than the Association, and if the matter would be addressed by Council, he would not object to its insertion. Fortunately, Strickland was personally known to most of the council members and his opinions were highly regarded.

Fig. 1. (left). Title-page of the first printed draft of rules for nomenclature, dated September 1841 and printed by Richard and John E. Taylor, Red Lion Court, Fleet Street, London. Entitled *Proposed plan for rendering the nomenclature of zoology uniform and permanent* (UMZC, Strickland Archive, N-089).

Fig. 2. (right). Title-page of the second draft of the 'rules' printed in May 1842 by Taylor in London, entitled *Proposed Report of the Committee on Zoological Nomenclature. For the use of the members of the Committee* (UMZC, Strickland Archive, N-119).

It is proposed at a future period to submit the following scheme to the consideration of the British Association for the Advancement of Science. Previously, however, to doing so, it seems desirable to mature the plan as much as possible, by obtaining the opinions of eminent zoologists in various countries; and the proposers of the measure will therefore feel grateful for any remarks or criticisms with which they may be favoured, addressed to the care of Mr. Richard Taylor, Red Lion Court, Fleet Street, London.

PROPOSED PLAN FOR RENDERING THE NOMENCLATURE OF ZOOLOGY UNIFORM AND PERMANENT.

PREFACE.

All persons who are conversant with the present state of Zoology must be aware of the great detriment which the science sustains from the vagueness and uncertainty of its nomenclature. We do not here refer to those diversities which arise from the various methods of classification adopted by different authors, and which are unavoidable in the present state of our knowledge. So long as naturalists differ in the views which they are disposed to take of the natural affinities of animals there will always be diversities of classification, and the only way to arrive at the true system of nature is to allow perfect liberty to systematists in this respect. But the evil complained of is of a different character. It consists in this, that when naturalists are agreed as to the characters and limits of an individual group or species, they still vary in the appellations by which they distinguish it. A genus is often designated by three or four, and a species by twice that number of precisely equivalent synonyms; and, in the absence of any rule on the subject, the naturalist is wholly at a loss what nomenclature to adopt. The consequence is, that the so-called commonwealth of science is becoming daily divided into independent states, kept asunder by diversities of language as well as by geographical limits. If an English zoologist, for example, visits the museums and converses with the professors of France, he finds that their *scientific* language is no less foreign to him than their *vernacular*. Almost every specimen which he examines is labelled by a title which is unknown to him, and he feels that nothing short of a continued residence in that country can make him conversant with her science. If he proceeds thence to Germany or Prussia, he is again at a loss:

[For the Use of the Members of the Committee.]

PROPOSED REPORT OF THE COMMITTEE ON ZOOLOGICAL NOMENCLATURE.

A COMMITTEE having been appointed by the Council of the British Association "to consider of the rules by which the Nomenclature of Zoology may be established on a uniform and permanent basis," they beg leave to report, that an outline of the proposed code of rules having been drawn up and printed, copies of it were sent to many eminent zoologists at home and abroad, who were requested to favour the Committee with their observations and comments. Many valuable suggestions were obtained from this source, and the Committee having given their best endeavours to maturing the plan, beg now to submit it to the approval of the British Association under the title of a

PROPOSED PLAN FOR RENDERING THE NOMENCLATURE OF ZOOLOGY UNIFORM AND PERMANENT.

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was obtained, by which vessels of any magnitude might be drawn by a uniform mechanical force along any given distance. The forms of the models employed were not confined to mathematical and arbitrary solids, but were those of such classes of ships as are either actually employed in navigation, or have been proposed for that purpose. Among these were some of the highest reputation. It was found that there were other circumstances besides the form of the vessel which affected the result; and that the form and dimensions of the channel were as important as those of the vessel in determining it. Experiments had been instituted on the largest as well as the smallest scale, to show the law of relation between difference of the value various modes of experiment were illustrated by reference to drawings and tables which were prepared for publication. As an illustration of the value of giving a proper form to ships, altogether independently of proportion or dimension, the following remarkable experiments were adduced:—Four vessels, of about twenty-five feet length, having all the same dimensions of breadth and depth, of the same capacity and weight, and of the same draft of water, were towed together at the same time, under the same circumstances and at the same velocity. Some writers on naval architecture have asserted that, in such circumstances, vessels would have precisely the same resistance. The forms of these four vessels were not, to an inexperienced eye, very dissimilar: they were all good sea boats, and each of them found its admirers to give its shape a preference over the others. These vessels, alike in all their principal dimensions, and weight, and area of midship section, and draft of water, differed so much in resistance, that the one had nearly double resistance to another: thus, at $7\frac{1}{2}$ miles an hour, the resistances were as follows:—

No. I. form.....	56.6 lbs. resistance.
No. II.	138.5
No. III.	102.7
No. IV.	90.2

All of these were good sea boats, and it was one of the most valuable of these results, that No. I., the form of least resistance, was found also the best sea boat, the easiest, and the driest. The whole of the observations, comprising more than 20,000, were in the course of preparation for publication, so that the whole body of the observations would be at the disposal of the Members of the Association. It had been the aim of the Committee to reduce the whole into the form most immediately conducive to the purposes of the naval constructor and mercantile ship-builder, and the drawings had been made on the scale and with the accuracy of the drafts of ships of the largest class.

Mr. Russell also explained a model showing the waves in a channel arising from the natural channel wave and the wave resulting from the form of the boat.

Report of a Committee appointed "to consider of the rules by which the Nomenclature of Zoology may be established on a uniform and permanent basis."

[*Minute of Council, Feb. 11, 1842.*]

"Resolved,—That (with a view of securing early attention to the following important subject) a Committee consisting of Mr. C. Darwin, Prof. Henslow, Rev. L. Jenyns, Mr. W. Ogilby, Mr. J. Phillips, Dr. Richardson, Mr. H. E. Strickland (reporter), Mr. J. O. Westwood, be appointed, to consider of the rules by which the Nomenclature of Zoology may be established

Fig. 3. (left). First page of the 'Report of a Committee appointed to consider of the Rules by which the nomenclature of zoology may be established on a uniform and permanent basis' as printed in the *Report of the Meeting of the British Association for the Advancement of Science*, vol. 12, p. 105 (1843).

Fig. 4. (right). First page of the reprint of the 'rules' as a pamphlet entitled *Report of a Committee appointed 'to consider of the rules by which the Nomenclature of Zoology may be established on a uniform and permanent basis' (UMZC, Strickland Archive, N-153b).*

REPORT

OF

A COMMITTEE

APPOINTED TO PRINT AND CIRCULATE

A REPORT

ON

ZOOLOGICAL NOMENCLATURE.

BY

H. E. STRICKLAND.

[From the Report of the British Association for the Advancement of Science for 1843.]

LONDON:

PRINTED BY RICHARD AND JOHN E. TAYLOR,

RED LION COURT, FLEET STREET.

1844.

Although the documents give no further insight in the decision-making process, Strickland's manoeuvring was obviously successful, as the 'rules' were printed in the main section of the *Report* of the 1842 Manchester meeting, which appeared in 1843 (BAAS 1843, pp. 105–121; fig. 3). The text is prefaced by the relevant resolutions and the work of the committee is emphasised. The authority under which it was issued is left unnoticed, thereby obviously leaving an impression that the contents were in fact approved by the BAAS. The report was dated 'June 27, 1842' (the date of final composition, not that of the reading) and signed by Strickland, Phillips, Richardson, Owen, Jenyns, Broderip, Shuckard, Waterhouse, Yarrell, Darwin and Westwood. The actual date of distribution of the *Report* of the Manchester meeting of the BAAS is unknown, but it is likely that it was available in March 1843 at the latest, because it was reprinted in Jardine's *Annals of Natural History* for April 1843 (Strickland 1843c) and in Taylor's *London, Edinburgh and Dublin Philosophical Magazine and Journal of Science* for August 1843 (Strickland 1843d). In these two periodicals, the 'rules' were credited to a committee 'appointed by the British Association for the Advancement of Science,' exactly how Strickland intended it to be written.

The 'rules' were also reprinted (probably in 1843) as a small pamphlet entitled *Report of a Committee appointed 'to consider of the rules by which the Nomenclature of Zoology may be established on a uniform and permanent basis'* (Strickland, 1843b; N-153b, fig. 4). It has 17 pages, like the version printed in the BAAS Report, but the type-setting and breaks in pages are not identical. In the pamphlet, the following text is printed above the title: 'Presented by the British Association for the Advancement of Science, to [blank]'. There exists a separate title-page, detached from the pamphlet (N-153b), where Strickland is given as the author and the publisher is provided: 'London: Printed by Richard and John E. Taylor, Red Lion Court, Fleet Street. 1844.' The pamphlet was printed and circulated according to the directions issued at the Manchester meeting using the grant of £10. Soon there were translations into French, a reprint in an American journal, and discussions among Italian scientists (Daryat, 2010; Minelli, 2008).

The reception of the *Rules*

The real battle still had to be fought. Strickland had done all he could to draft the rules and recommendations, to select interested and eminent scientists to constitute a committee, to receive the backing of an eminent society like the British Association for the Advancement of Science and to get his work in print and circulated both at home and abroad. He provided a platform for discussion and revision, he had sown the seeds. Now it was up to working scientists to follow his lead and put the directives into practice. Change could only come slowly. Charles Darwin, for instance, although one of the signatories of the 'rules', confessed to find 'the rules very useful; it is quite a comfort to have something to rest on in the turbulent ocean of nomenclature, (& am accordingly grateful to you) though I find it very difficult to obey always' (Darwin to Strickland, 29 January 1849; N-168). Jardine (1866, p. 267) gave a fair summary of the acceptance of the 'rules' during the first twenty years in saying that 'zoological nomenclature has not improved. Whether it is from the rules and recommendations not being sufficiently well known, or from an idea that no one has any right to interfere with or make rules for others, many gentlemen appear to

cast them away, and do not recognise them at all, while others accept or reject just what pleases themselves’.

Strickland’s ‘rules’ were restructured and reprinted in the 1860’s, again under the auspices of the BAAS (Jardine 1866).

New rules of course take time to be disseminated and to become accepted. It is in the interest of all taxonomists to base their work on a nomenclature which is up-to-date and stable. Perhaps British naturalists in the nineteenth century could have embraced Strickland’s Code with more fervour and unanimity. Many of them, and their colleagues in other parts of the world, did take heed of the important propositions suggested by Strickland. This paved the way to the foundation of the International Commission on Zoological Nomenclature in 1895 (Melville, 1995) and the publication of the new editions of the Code of Zoological Nomenclature.

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References

- Athenaeum.** 1843. Twelfth meeting of the British Association for the Advancement of Science. *Athenaeum*, no. 765 (25 June): 567–568; no. 766 (2 July): 587–598; no. 767 (9 July): 613–621; no. 768 (16 July): 637–643; no. 769 (23 July): 660–669; no. 770 (30 July): 686–693.
- BAAS (British Association for the Advancement of Science).** 1842. *Report of the eleventh meeting of the British Association for the Advancement of Science held at Plymouth in July 1841*. xxxv, 356, vii, 115 pp. John Murray, London.
- BAAS (British Association for the Advancement of Science).** 1843. *Report of the twelfth meeting of the British Association for the Advancement of Science held at Manchester in June 1842*. xxxvi, 213, viii, 126 pp. John Murray, London.
- Burckhardt, F. & Smith, S.** 1985. *The correspondence of Charles Darwin, vol. 2: 1837–1843*. xxxiii, 609 pp. Cambridge University Press, Cambridge.
- Dayrat, B.** 2010. Celebrating 250 dynamic years of nomenclatural debates. Pp. 185–239 in Polaszek, Andrew (Ed.), *Systema Naturae 250: The Linnean ark*. xvi, 276 pp. CRC Press, Boca Raton.
- Jardine, W.** 1858. *Memoirs of Hugh Edwin Strickland, M.A., Fellow of the Royal, Linnean, Geological and Royal Geographical Societies, etc. Deputy Reader of Geology in Oxford*. cclxv, xvi, 441 pp. John van Voorst, London.
- Jardine, W.** 1866. Report of a Committee ‘appointed to report on the changes they make consider desirable to make, if any, in the Rules of Zoological Nomenclature drawn up by Mr. H.E. Strickland, at the instance of the British Association at their meeting in Manchester in 1842. *Report of the Meeting of the British Association for the Advancement of Science*, 35 (Birmingham, 1865): 25–42.
- McOuat, G.R.** 1996. Species, rules and meaning: the politics of language and the ends of definitions in 19th century natural history. *Studies in History and Philosophy of Science*, 27(4): 473–519.
- McOuat, G.R.** 2001a. From cutting nature at its joints to measuring it: new kinds and new kinds of people in biology. *Studies in History and Philosophy of Science*, 32(4): 613–645.
- McOuat, G.R.** 2001b. Cataloguing power: delineating ‘competent naturalists’ and the meaning of species in the British Museum, *British Journal for the History of Science*, 34(1): 1–28.
- Melville, R.V.** 1995. *Towards stability in the names of animals: a history of the International Commission on Zoological Nomenclature 1895–1995*. viii, 92 pp. ICZN, London.

- Minelli, A.** 2008. Zoological vs. botanical nomenclature: a forgotten 'Biocode' experiment from the times of the Strickland Code. *Zootaxa*, **1950**: 21–38.
- Ogilby, W.** 1838. Observations on 'rules for nomenclature' *Magazine of Natural History*, (n.s.) **2**: 150–157.
- Rookmaaker, L.C.** 2010. *Calendar of the scientific correspondence of Hugh Edwin Strickland in the University Museum of Zoology, Cambridge*. 379 pp. University Museum of Zoology, Cambridge.
- S.D.W.** 1834. Species of birds of which individuals in plumage anomalous to that of the species, and permanent, have been known. *Magazine of Natural History*, **7**: 593–594.
- Sclater, P.L.** 1878. *Rules for zoological nomenclature drawn up by the late H.E. Strickland, M.A., F.R.S. (assisted by many zoologists, British and Foreign), at the instance of the British Association*. 27 pp. John Murray, London.
- Strickland, H.E.** 1835. On the arbitrary alteration of established terms in natural history. *Magazine of Natural History*, **8**: 36–40.
- Strickland, H.E.** 1837a. On the inexpediency of altering established terms in natural history. *Magazine of Natural History*, (2)**1**: 127–131.
- Strickland, H.E.** 1837b. Rules for zoological nomenclature. *Magazine of Natural History*, (2)**1**: 173–176.
- Strickland, H.E.** 1838a. Reply to Mr. Ogilby's 'Observations on rules for nomenclature'. *Magazine of Natural History*, (2)**2**: 198–204.
- Strickland, H.E.** 1838b. Remarks on Mr. Ogilby's 'Further observations on rules for nomenclature.' *Magazine of Natural History*, (2)**2**: 326–331.
- Strickland, H.E.** 1841. *Proposed plan for rendering the nomenclature of zoology uniform and permanent*. (Draft, September 1841.) 15 pp. Printed by Richard & John E. Taylor, Red Lion Court, Fleet Street, London. [Strickland Archive, N-089].
- Strickland, H.E.** 1842. *Proposed report of the Committee on Zoological Nomenclature. For the use of the members of the Committee*. (Second draft, May 1842.) 16 pp. Printed by Richard & John E. Taylor, Red Lion Court, Fleet Street, London. [Strickland Archive, N-119].
- Strickland, H.E.** 1843a. Report of a Committee appointed to consider of the Rules by which the nomenclature of zoology may be established on a uniform and permanent basis. *Report of the Meeting of the British Association for the Advancement of Science*, **12** (Manchester 1842): 105–120. [Reprinted in Jardine 1858, p. 375 and Minelli 2008].
- Strickland, H.E.** [1843b]. *Report of a Committee appointed "to consider of the rules by which the Nomenclature of Zoology may be established on a uniform and permanent basis"*. 17 pp. No publisher, no place. [Strickland Archive N-153a; reproduced on <http://www.darwin-online.org.uk>].
- Strickland, H.E.** 1843c. Series of propositions for rendering the nomenclature of zoology uniform and permanent, being the report of a Committee for the consideration of the subject, appointed by the British Association for the Advancement of Science. *Annals of Natural History*, **11**(70): 259–275.
- Strickland, H.E.** 1843d. Series of propositions for rendering the nomenclature of zoology uniform and permanent, being the report of a Committee for the consideration of the subject, appointed by the British Association for the Advancement of Science. *London, Edinburgh and Dublin Philosophical Magazine and Journal of Science*, (3)**23**(150): 108–124.

Case 3532***Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by designation of a neotype**

Alberto Cecalupo

Via Grancino 6y, 20090 Buccinasco, Italy

Elio Robba

Dipartimento di Scienze Geologiche e Geotecnologie, Università degli Studi di Milano Bicocca, Piazza della Scienza 4, 20126 Milano, Italy
(e-mail: elio.robba@unimib.it)

Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the current usage of the name *Cerithiopsis tubercularis* (Montagu, 1803) for a species of cerithiopsine gastropod from the southern coast of Great Britain. The lectotype of *Cerithiopsis tubercularis* (Montagu, 1803) is not in taxonomic accord with the current usage of this name and the confusing description ignoring the part bearing the most obvious diagnostic characters led to considerable confusion. It is proposed that the previous type fixations for the species *Cerithiopsis tubercularis* (Montagu, 1803) be set aside and a neotype consistent with the current usage be designated.

Keywords. Nomenclature; taxonomy; CERITHIOPSIDAE; *Cerithiopsis*; *Cerithiopsis tubercularis*; cerithiopsine gastropod; Recent; Atlantic; Mediterranean.

1. *Murex tubercularis* was established by Montagu (1803, p. 270) on the basis of Recent British specimens found at ‘the mouth of the Ann in Devonshire’ and ‘on the coast of Sandwich’. In Montagu’s text there is no information about the number of specimens dealt with. The brief original description ‘M. with nine or ten, slender, taper, tuberculated volutions, separated only by a slight depression: colour chestnut-brown: apex pointed; aperture small, oval, ending in a canal, somewhat enclosed by the columella turning inward. Length a quarter of an inch’, and the absence of any illustration failed to clarify the distinguishing characters of the species. Forbes & Hanley (1851), introducing the new genus *Cerithiopsis* for Montagu’s species (p. 364), were the first to delineate (p. 365) the main characters of *Cerithiopsis tubercularis*, which was reported to have a uniform dark or chocolate-brown colour, three to four smooth and semitransparent apical whorls, 3 spiral rows of beads on the spire whorls, and 2–3 basal spirals. The interpretation of most subsequent workers has followed the species concept outlined by Forbes & Hanley (1851). Only some sculptural details of the protoconch, i.e. subsutural and suprasutural granular microprotuberances, were discovered more recently with the advent of scanning electron microscopy.

2. While there is general agreement about the teleoconch characters of *C. tubercularis*, remarkable discrepancies exist concerning the sculpture of the larval shell of the species (cf. Jeffreys, 1885; Glibert, 1973; Richter & Thorson, 1975; Grecchi, 1984; Giribet & Peñas, 1997; Giannuzzi-Savelli et al., 1999; Landau et al., 2006; Chirli, 2009; Prkić & Mariottini, 2009). Marshall (1978), aiming to correctly interpret *Cerithiopsis tubercularis*, examined a syntype from the Montagu Collection in the City Museum, Exeter (EXEMS) and designated it as lectotype of *C. tubercularis*. Marshall (p. 83) provided a detailed description of the protoconch of the lectotype 'Protoconch of planktotrophic larval type, clearly demarcated from teleoconch whorls. Last half-whorl with a sharp peripheral carina and evenly spaced brephic riblets on shoulder. First $1^{1/2}$ (embryonic) whorls minutely granulate throughout. Subsequent whorls traversed over abapical two-thirds by fine, crisp, evenly spaced prosocline riblets; each riblet with about 5 evenly spaced triangles extending in the direction of coiling for about width of rib from apertural side. Sinusigera sinus deep, opisthocyrt-opisthocline.' Marshall (1978, fig. 13C) figured the entire shell of the lectotype of *C. tubercularis* without any SEM image of its protoconch.

3. Montagu's original material in EXEMS consists of one box with two specimens glued to a small piece of paper attached to the original manuscript label; these specimens are collectively numbered 4235. The first syntype (Fig. 1A) lacks the protoconch. Its teleoconch of about 10 whorls conforms to the concept of *Cerithiopsis tubercularis* followed for nearly two centuries by most authors and is not in disagreement with the short description published by Montagu; there are no upper basal spirals and the color is reddish-brown. The second syntype retains only the last protoconch whorl (Fig. 1C) sculptured with sparse granules and unevenly spaced, broken prosocline riblets on the abapical three-quarters, with remnants of minute granules occurring subsuturally. The teleoconch (Fig. 1B) of about 8 whorls is closely similar to that of the first syntype; the color is whitish. This specimen was designated as the lectotype of *C. tubercularis* by Marshall (1978) as indicated by a label of National Museum, Wellington, N.Z., now in EXEMS (Fig. 1D). The illustration of the lectotype published by Marshall (1978, fig. 13C) shows a shell with a complete protoconch; thus, it must be inferred that the protoconch was broken after Marshall's examination of the specimen. The sculpture observed on the preserved whorl (the last) of the protoconch scarcely agrees with the description of the larval shell of the lectotype provided by Marshall, whereas it matches that reported by Marshall (1978, p. 84) for his new species *Cerithiopsis powelli* (Fig. 1G). The description of the larval shell of the lectotype of *Cerithiopsis tubercularis* published by Marshall (1978) agrees with that of the lectotype of *Cerithiopsis barleei* Jeffreys, 1867 (Fig. 1I) in the Smithsonian Institution, National Museum of Natural History, Washington (USNM), selected from lot USNM 62164 by Cecalupo & Robba (2010). This suggests that the type series of *C. tubercularis* is probably mixed and that the lectotype designated by Marshall could in fact be *C. barleei*. However, the sculpture on the last protoconch whorl (the preserved one) of the lectotype of *C. tubercularis* in EXEMS is more similar to that of New Zealand *Cerithiopsis powelli* as described and figured by Marshall (1978) than to that of the Atlantic and Mediterranean *C. barleei*. Because of this discrepancy, it is unclear which specimen Marshall actually examined, and the taxonomic identity of *C. tubercularis* cannot be reliably identified from the lectotype (the whitish syntype).

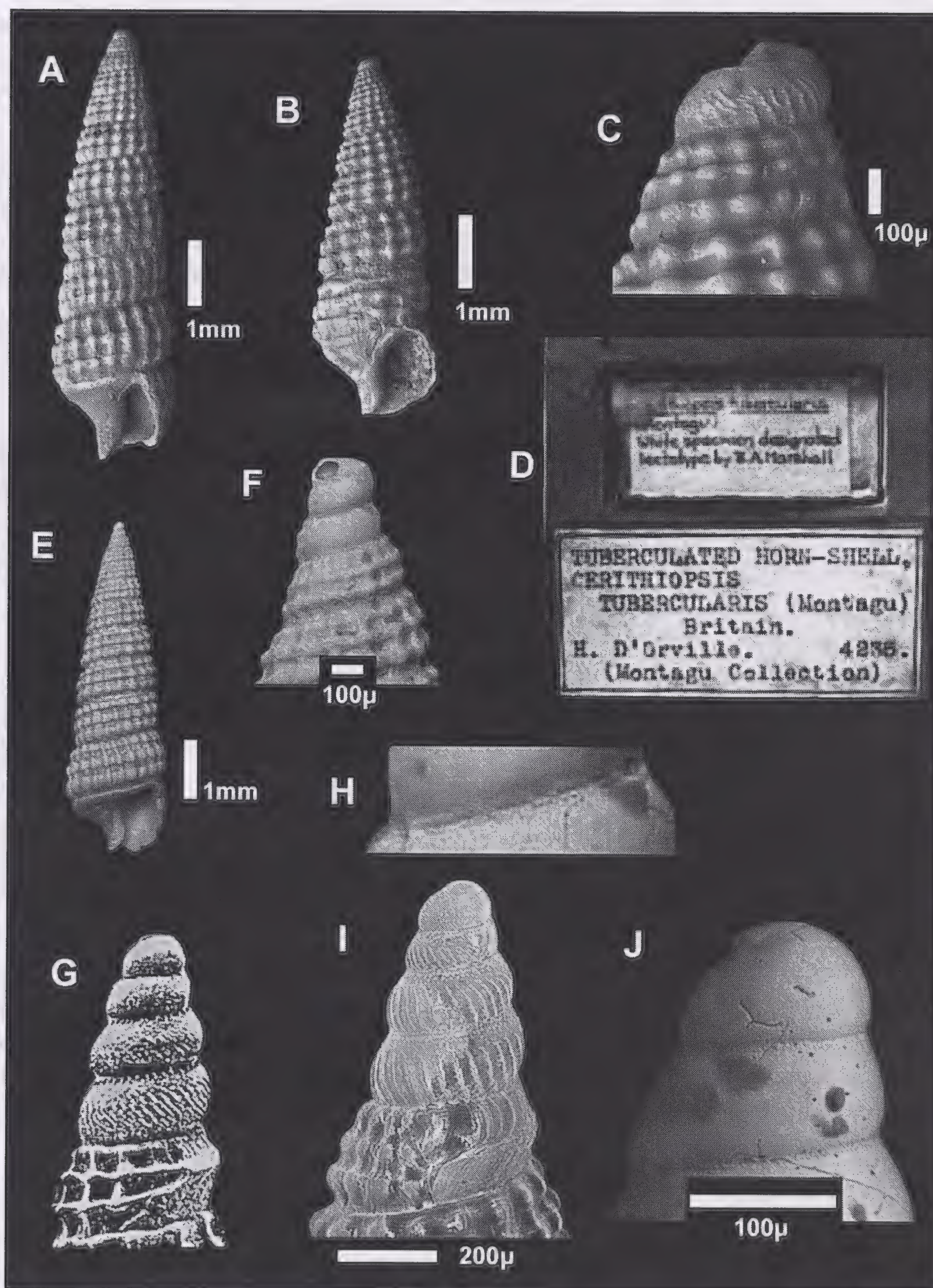


Fig. 1. A–C. Syntypes of *Murex tubercularis* Montagu, 1803, Montagu collection, EXEMS 4235 (2 specimens), mouth of the Ann in Devonshire and coast of Sandwich, Recent: A. Reddish-brown syntype (protoconch missing) conforming to the current concept of *Cerithiopsis tubercularis* (Montagu, 1803); B. Whitish syntype designated lectotype of *Cerithiopsis tubercularis* (Montagu, 1803) by Marshall (1978); C. Same, detail of last protoconch whorl. D. EXEMS labels. The upper label reads 'National Museum, Wellington, N.Z. *Cerithiopsis tubercularis* (Montagu). White specimen designated lectotype by B.A. Marshall'. The lower label reads 'Tuberculated Horn-Shell. *Cerithiopsis tubercularis* (Montagu). Britain. H. D'Orville. 4235. (Montagu Collection)'. E, F, H. Possible syntype of *Murex tubercularis* Montagu, 1803, Montagu's types, BMNH 20090384, British coast, Recent, proposed herein as neotype of *Murex tubercularis* Montagu, 1803: E. Apertural view; F. Preserved apical whorls; H. detail of F showing remnants of subsutural and suprasutural granular microprotuberances. G. Protoconch of *Cerithiopsis powelli* Marshall, 1978 (reproduced from Fig. 13B of Marshall) diameter 0.4 mm. I. Protoconch of the lectotype of *Cerithiopsis barleei* Jeffreys, 1867. J. *Cerithiopsis tubercularis* (Montagu, 1803) of prevailing usage, Tasucu, Turkey, 7 m depth; detail of the protoconch showing remnants of granular microprotuberances (illustrated for comparison).

4. The lectotype does not conform to the prevailing usage of *C. tubercularis* (Sowerby, 1855, 1859; Jeffreys, 1867, 1869; Bucquoy, Dautzenberg & Dollfus, 1884; Watson, 1886; Locard, 1892; 1903; Kobelt, 1908; Lebour, 1933; Thiriot-Quiévreux, 1969; Fretter & Pilkington, 1970; Parenzan, 1970; Hubendick & Warén, 1972; Thiriot-Quiévreux & Rodriguez Babio, 1975; Nordsiek, 1976; Fretter & Graham, 1982; van Aartsen et al., 1984; Graham, 1988; Cachia et al., 1996; Palazzi & Villari, 2001; Coppini, 2008; Cecalupo & Robba, 2010). In fact, the protoconch of *C. tubercularis*, as described and/or illustrated by the cited authors, differs markedly in having convex whorls throughout, being devoid of axial sculpture and bearing only suprasutural and subsutural granular microprotuberances.

5. Amelia MacLellan found a possible syntype (BMNH 20090384) of *Cerithiopsis tubercularis* in the Natural History Museum, London. She (pers. comm., 2009) informed us that 'it is considered so as the labelling on the specimen is the same as other material thought to be Montagu's types'. The locality of this possible syntype is 'British Coast'. The specimen is nicely preserved and retains the last 2 whorls of the larval shell. The protoconch whorls are convex, showing remnants of subsutural and suprasutural granular microprotuberances; there is no trace of either axial sculpture or carination of the last half-whorl (Fig. 1F, H). These characters fully agree with the SEM images and the descriptions of the protoconch of *C. tubercularis* published by some recent workers (Thiriot-Quiévreux & Rodriguez Babio, 1975; Nordsiek, 1976; Fretter & Graham, 1982). The teleoconch (Fig. 1E) conforms in shape and sculpture to the current concept of *C. tubercularis*; the colour is slightly pale reddish-brown.

6. From the above, it appears that (1) the two types of *Cerithiopsis tubercularis* in EXEMS belong to two different species, (2) the identity of the lectotype is doubtful, and (3) the lectotype is not in taxonomic accord with the prevailing usage of the name. We conclude that the existing name-bearing type of *C. tubercularis* should be set aside and a neotype designated in order to maintain stability (Article 75.6 of the Code). The reddish-brown syntype in EXEMS is most probably *C. tubercularis*, but it is not suitable for a neotype as it lacks the protoconch (Recommendation 75A of the Code). We think it wiser to select the better preserved possible syntype (BMNH 20090384) as neotype of *Cerithiopsis tubercularis*.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the species *Murex tubercularis* Montagu, 1803 and to designate as neotype the possible syntype BMNH 20090384 at the Natural History Museum, London;
- (2) to place on the Official List of Specific Names in Zoology the name *tubercularis* Montagu, 1803, as published in the binomen *Murex tubercularis* and as defined by the neotype designated in (1) above.

References

- Bucquoy, E., Dautzenberg, P. & Dollfus, G. 1882–1886. *Les Mollusques Marins du Roussillon. Tome I. Gastropodes*. Pp. 1–84 (1882); pp. 85–196 (1883); pp. 197–342 (1884); pp. 343–418 (1885); pp. 419–570 (1886) J.-B. Baillière & Fils, Paris.
- Cachia, C., Mifsud, C. & Sammut, P.M. 1996. *The marine Mollusca of the Maltese Islands (Part Two: Neotaenioglossa)*. 228 pp. Backhuys Publishers, Leiden.

- Cecalupo, A. & Robba, E. 2010. The identity of *Murex tubercularis* Montagu, 1803 and description of one new genus and two new species of the Cerithiopsidae (Gastropoda: Triphoroidea). *Bollettino Malacologico*, **46**: 45–64.
- Chirli, C. 2009. *Malacofauna pliocenica Toscana*, vol. 7. 98 pp. Published by the author, Tavarnelle.
- Coppini, M. 2008. *La famiglia Cerithiopsidae H. & A. Adams, 1853*. 26 pp. (unnumbered) Documenti del Gruppo Malacologico Livornese, online report.
- Forbes, E. & Hanley, S. 1848–1853. *A history of British Mollusca and their shells*. Vol. 1, pp. 1–477 (1848); vol. 2, pp. 1–480 (1849); vol. 3, pp. 1–320 (1850), pp. 321–616 (1851); vol. 4, pp. 1–301 (1852–1853) John Van Voorst, London.
- Fretter, V. & Graham, A. 1982. The Prosobranch Molluscs of Britain and Denmark. Part 7 – ‘Heterogastropoda’ (Cerithiopsacea, Triforacea, Epitoniacea, Eulimacea). *The Journal of Molluscan Studies, Supplement*, **11**: 363–434.
- Fretter, V. & Pilkington, C. 1970. Prosobranchia veliger larvae of Taenioglossa and Stenoglossa. *Conseil International pour l'Exploration de la Mer. Zooplankton*, sheets 129–132 (pp. 1–26).
- Giannuzzi-Savelli, R., Pusateri, F., Palmeri, A. & Ebreo, C. 1999. *Atlante delle conchiglie del Mediterraneo. Vol. 3 (Caenogastropoda parte 2: Ptenoglossa)*. 127 pp. Edizioni Evolver s.r.l., Roma.
- Giribet, X. & Peñas, Y. 1997. Malacological marine fauna from Garraf coast (NE Iberian Peninsula). *Iberus*, **15**: 41–93.
- Glibert, M. 1973. Révision des Gastropoda du Danien et du Montien de la Belgique. I. Les Gastropoda du Calcaire de Mons. *Mémoires de l'Institut Royal des Sciences Naturelles de Belgique*, **173**: 1–116.
- Grecchi, G. 1984. Molluschi planctonici e bentonici in sedimenti sapropelitici del Quaternario della Dorsale Mediterranea. *Bollettino Malacologico*, **20**: 1–34.
- Hubendick, B. & Waren, A. 1972. Småsnäckor från Svenska västkusten. 4. Släktena *Laeocochlis*, *Triphora*, *Cerithiella*, *Aclis*, *Trophon* m.fl. *Göteborgs Naturhistoriska Museum*, **1972**: 45–50.
- Jeffreys, J.G. 1867. *British Conchology, or an account of the Mollusca which now inhabit the British Isles and the surrounding seas*, vol. IV. 486 pp. John Van Voorst, London.
- Jeffreys, J.G. 1869. *British Conchology, or an account of the Mollusca which now inhabit the British Isles and the surrounding seas*, vol. 5. 258 pp. John Van Voorst, London.
- Jeffreys, J.G. 1885. On the Mollusca procured during the ‘Lightning’ and ‘Porcupine’ Expeditions, 1868–70. Part 9. *Proceedings of the Zoological Society of London*, **1885**: 27–63.
- Kobelt, W. 1908. *Iconographie der schalentragenden europäischen Meeresconchylien. Vierter Band*. 172 pp. C.W. Kreidel's Verlag, Wiesbaden.
- Landau, B., La Perna, R. & Marquet, R. 2006. The Early Pliocene Gastropoda (Mollusca) of Estepona, Southern Spain. Part 6: Triphoroidea, Epitonioidae, Eulimoidea. *Palaeontos*, **10**: 1–96.
- Lebour, M.V. 1933. The life-histories of *Cerithiopsis tubercularis* (Montagu), *C. barleei* Jeffreys and *Triphora perversa* (L.). *Journal of the Marine Biological Association of the United Kingdom. (N.S.)*, **18**: 491–498.
- Locard, A. 1892. *Les coquilles marines des côtes de France*. 384 pp. J.-B. Baillière & Fils, Paris.
- Locard, A. 1903. Les *Cerithium* et les Cerithiidae des mers d'Europe. *Annales de la Société d'Agriculture, Sciences et Industrie de Lyon*, **10** (1902): 95–128.
- Marshall, B.A. 1978. Cerithiopsidae (Mollusca: Gastropoda) of New Zealand, and provisional classification of the family. *New Zealand Journal of Zoology*, **5**: 47–120.
- Montagu, G. 1803. *Testacea Britannica or Natural History of British Shells, Marine, Land, and Fresh-Water*. xxxvii, 606 pp. J.S. Hollis, London.
- Nordsiek, F. 1976. Il Genere *Cerithiopsis* Forbes & Hanley, 1849 nei mari d'Europa. *La Conchiglia*, **85–86**: 6–7 & 18.
- Palazzi, S. & Villari, A. 2001. Molluschi e brachiopodi delle grotte sottomarine del Taorminese. *La Conchiglia, Suppl.*, **297**: 1–56.

- Parenzan, P.** 1970. *Carta d'identità delle conchiglie del Mediterraneo. Vol. 1 Gasteropodi*. 283 pp. Ed. Bios Taras, Taranto.
- Prkić, J. & Mariottini, P.** 2009. Description of two new *Cerithiopsis* from the Croatian coast, with comments on the *Cerithiopsis tubercularis* complex (Gastropoda: Cerithiopsidae). *Aldrovandia*, **5**: 3–27.
- Richter, G. & Thorson, G.** 1975. Pelagische Prosobranchienlarven des Golfes von Neapel. *Ophelia*, **13**: 109–185.
- Sowerby, G.B.** 1855. *Monographs of genera of shells. Vol. II*. 460 pp. G.B. Sowerby, London.
- Sowerby, G.B.** 1859. *Illustrated index of British shells containing figures of all the Recent species*. I–XV pp. Simpkin, Marshall & Co., London.
- Thiriot-Quiévreux, C.** 1969. Caractéristiques morphologiques des véligères planctoniques de gastéropodes de la région de Banyuls-sur-Mer. *Vie et Milieu, Série B: Océanographie*, **20**: 333–366.
- Thiriot-Quiévreux, C. & Rodriguez Babio, C.** 1975. Étude des protoconques de quelques prosobranches de la région de Roscoff. *Cahiers de Biologie Marine*, **16**: 135–148.
- Watson, R.B.** 1886. On the Cerithiopsides from the Eastern Side of the North Atlantic, with three new Species from Madeira. *The Journal of the Linnean Society. Zoology*, **19**: 89–95.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3533***Neobisium* Chamberlin, 1930 (Arachnida, Pseudoscorpiones): proposed precedence over *Blothrus* Schiödte, 1847**

Mark S. Harvey

*Department of Terrestrial Zoology, Western Australian Museum,
Locked Bag 49, Welshpool DC, Western Australia 6986, Australia
(e-mail: mark.harvey@museum.wa.gov.au)*

Volker Mahnert

*Muséum d'histoire naturelle, Case postale 6434, CH-1211 Genève 6,
Switzerland (e-mail volker.mahnert@wanadoo.fr)*

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used pseudoscorpion generic name *Neobisium* Chamberlin, 1930 by giving it precedence over the genus-group name *Blothrus* Schiödte, 1847, which is currently used as a subgenus or synonym of *Neobisium*. The name *Neobisium* is in widespread use for a group of pseudoscorpions found in the western Palaearctic region.

Keywords. Nomenclature; taxonomy; Arachnida; Pseudoscorpiones; NEOBISIIDAE; *Neobisium*; *Blothrus*; pseudoscorpions; Palaearctic.

1. The genus-group name *Blothrus* was proposed by Schiödte (1847, p. 80) for a large cave-dwelling pseudoscorpion from Slovenia, *B. spelaeus* Schiödte, 1847, which is the type species by monotypy. Although the original descriptions of both the genus and species were fairly brief and undiagnostic, Schiödte (1851a, p. 23) subsequently provided a longer description as well as five illustrations. Schiödte's second paper was translated into English (Schiödte, 1851b, p. 148), although the taxonomic descriptions were only partly included and only a small subset of the illustrations, which were redrafted, were included. Schiödte's (1847) specimens were apparently taken from Luegger Grotte and Adelsberger Grotte (Schiödte stated 'Luegger- og Adelsberger-Hulen' in Danish), which are nowadays situated in Slovenia. Adelsberger Grotte is the German term for an extensive cave system which is nowadays referred to by its Slovenian name, Postojnska Jama. The cave is located on the outskirts of Postojna village. Luegger Grotte is also known as Lueger Höhle, and is situated near Predjama (Kempe et al., 2006), which is situated 8 km WNW of Postojnska Jama. The total number of specimens examined by Schiödte (1847) was not stated but we are aware of type specimens of *B. spelaeus* that are lodged in two institutions. The Zoological Museum of the University of Copenhagen, Denmark has seven large specimens, which are probably adults, and a nymph labelled 'Adelsberger hulen' stored in ethanol (N. Scharff, in litt.) (ZMUC accession number 8/45) of which Chamberlin (1930, p. 11) apparently examined a single female. The Natural History Museum, London, U.K. has a single specimen from Adelsberger Grotte with

the registration number BMNH 1907.3.18.63 (Judson, 1997). A modern description of this species was provided by Ćurčić (1988, p. 52) based on new material from Croatia.

2. The genus *Neobisium* Chamberlin, 1930 (p. 11) was proposed for a group of species that were previously placed within *Obisium* Illiger, 1798 with the type species *Obisium muscorum* Leach, 1817 (p. 78), by original designation. Chamberlin suggested that the name was a 'nom. nov.' for *Obisium* but in the modern sense this is not the case. *Obisium* had been used as a valid genus-group name during much of the 19th and early 20th centuries but had been found by Westwood (1836, p. 10) and Kew (1911, p. 52) to be synonymous with *Chelifer* Geoffroy, 1762, since both claim *Acarus cancroides* Linnaeus, 1758 as their type species. Usage of the name *Obisium* effectively ceased in 1930 with the adoption of the name *Neobisium*.

3. Chamberlin (1930) considered *Blothrus* and *Neobisium* to be separate genera, but Beier (1932) and most subsequent authors have treated *Blothrus* as a subgenus of *Neobisium* (e.g. Rafalski, 1937, 1967; Beier, 1939, 1953, 1955a, 1956, 1963; Hadži, 1940; Vachon, 1947, 1966, 1976; Verner, 1958, 1971; Vachon and Gabbutt, 1964; Heurtault-Rossi, 1966; Heurtault, 1968, 1971, 1994; Ćurčić, 1972; Mahnert, 1972, 1988; Gulička, 1977; Leclerc, 1982, 1989; Krumpál, 1983; Harvey, 1991; Ducháč, 1996; Gardini, 2000; Steup, 2006; Zaragoza, 2007), even though *Blothrus* antedates *Neobisium* by more than 80 years.

4. The genus *Neobisium* is currently the largest known genus of pseudoscorpions and contains 227 Recent species and 37 Recent subspecies (Harvey, 2009b), as well as two species described from Eocene Baltic amber deposits (Beier, 1955b; Judson, 2003). It has been divided into six subgenera, *N. (Neobisium)*, *N. (Blothrus)*, *N. (Ommatoblothrus)* Beier, 1956, *N. (Heoblothrus)* Beier, 1963, *N. (Neoccitanobisium)* Callaini, 1981 and *N. (Pennobisium)* Ćurčić, 1988 (e.g. Beier, 1963; Ćurčić, 1988; Judson, 1992). Ćurčić (1984) abandoned the use of subgenera within *Neobisium*, arguing that the characters used to define the subgenera were ambiguous and subjective, based mostly on perceived levels of troglomorphy. He has been followed by other authors (e.g. Schawaller, 1985a, 1989; Schawaller and Dashdamirov, 1988; Judson, 2003; Dimitrijević, 2004, 2009). The abandonment of a subgeneric classification, however, does not affect the present case, as *Blothrus* remains a senior synonym of *Neobisium* whenever the type species of each genus-group name are deemed to be congeneric.

5. Species of the genus *Neobisium* are widespread over the western Palaearctic region (Harvey, 2009b) including much of continental Europe, various off-shore islands such as the Azores and Iceland (e.g. Beier, 1961; Agnarsson, 1998) and north-western Africa (e.g. Beier, 1930; Callaini, 1988; Leclerc, 1989; Heurtault, 1990). They occur as far east as Kazakhstan and Turkmenistan (Redikorzev, 1949; Schawaller, 1989) and the Russian provinces of Krasnoyarskiy Kray and Respublika Altay (Schawaller, 1985b), and there is also an introduced population of *N. carcinoides* Hermann, 1804 (p. 118) in Kenya (Mahnert, 1981).

6. *Neobisium* has been used as a valid generic name instead of *Blothrus* by many different authors in numerous publications. We have found 135 publications with 39 senior authors that use the name *Neobisium* in the title of the publication. These papers include taxonomic, ecological and morphological studies; this list is held by the Secretariat. Of the more comprehensive reviews of European pseudoscorpions,

Neobisium has been used for the faunas of Europe (Beier, 1963), Austria (Mahnert, 2004), Belgium (Henderickx, 1999), Croatia (Ozimec, 2004), Czech Republic and Slovakia (Verner, 1960, 1971), Estonia (Talvi, 2010), mainland France (Delfosse, 2003), Hungary (Kárpáthe gyi, 2007), Iceland (Agnarsson, 1998), Ireland (Jones, 1980; Legg & Jones, 1988), Italy (Gardini, 2000), Macedonia (Ćurčić et al., 2004), Montenegro (Ćurčić et al., 2004), The Netherlands (Tooren, 2005), Poland (Rafalski, 1967), Serbia (Ćurčić et al., 2004), Spain and Portugal (Zaragoza, 2007), Sweden (Lohmander, 1939), Turkey (Kunt et al., 2008) and the United Kingdom (Jones, 1980; Legg & Jones, 1988), and in general publications dealing with subterranean fauna (e.g. Ćurčić, 1988; Heurtault, 1994). *Neobisium* is also used as a valid name on various websites including *Pseudoscorpions of the World* (Harvey, 2009b), *Fauna Europaea* (Harvey, 2010) and the *Species 2000 Catalogue of Life Checklist* (Harvey, 2009a).

7. In addition to being a widely used generic name, *Neobisium* is the type genus of NEOBISIIDAE Chamberlin, 1930 and of the superfamily NEOBISIOIDEA Chamberlin, 1930. As in the situation with *Neobisium*, Chamberlin (1930) proposed NEOBISIIDAE as a replacement name for OBISIIDAE Sundevall, 1833, although OBISIIDAE is a synonym of CHELIFERIDAE, due to the synonymy of *Obisium* with *Chelifer*.

8. Article 23.1 of the International Code of Zoological Nomenclature clearly states that the valid name resulting from the synonymy of two or more genus-group names is the oldest valid name among those of its components. Harvey (1985) attempted to rectify the situation and proposed that *Blothrus* be given priority over *Neobisium*, as specified by the Code. This suggestion was met with resounding opposition from other pseudoscorpion specialists and Harvey later reverted to the traditional usage of *Neobisium* in his world catalogues of pseudoscorpions (Harvey, 1991, 2009b). Article 23.9 has provisions for the reversal of precedence without approaching the Commission, but in this case Article 23.9.1 does not apply as the senior synonym has been used as a valid name since 1899, either at the generic (Chamberlin, 1930, 1931; Caporiacco, 1948; Lapschoff, 1940) or subgeneric level (e.g. Beier, 1932, 1963; Roewer, 1937; Harvey, 1991; Heurtault, 1994; Gardini, 2000; Zaragoza, 2007). We believe that the strict application of the Principle of Priority would cause undue confusion, with over 200 species requiring transfer from *Neobisium* to *Blothrus*. An alternative scenario, to suppress the name *Blothrus*, would require the transfer of 90 species into a new subgenus, thus causing considerable nomenclatural instability. Therefore, as required by Article 23.9.3, we refer the matter to the Commission to give precedence to the younger synonym.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *Neobisium* Chamberlin, 1930 precedence over the name *Blothrus* Schiödte, 1847 whenever the two are considered to be congeneric;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Neobisium* Chamberlin, 1930 (gender: neuter), type species *Obisium muscorum* Leach, 1817 (a junior subjective synonym of *Chelifer carcinoides* Hermann, 1804) by original designation, with the endorsement that it is to be given precedence over *Blothrus* Schiödte, 1847, whenever the two are considered to be congeneric;

- (b) *Blothrur* Schiödte, 1847 (gender: masculine), type species *Blothrur spelaeus* Schiödte, 1847 by monotypy, with the endorsement that it is not to be given precedence over *Neobisium* Chamberlin, 1930, whenever the two are considered to be congeneric;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *spelaeus* Schiödte, 1847, as published in the binomen *Blothrur spelaeus* (specific name of the type species of *Blothrur* Schiödte, 1847);
 - (b) *carcinoides* Hermann, 1804, as published in the binomen *Chelifer carcinoides*, the valid specific name of the type species of *Neobisium* Chamberlin, 1930 (a senior subjective synonym of *Obisium muscorum* Leach, 1817).

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References

- Agnarsson, I. 1998. Íslenskar langfaetlur og drekar. *Fjölrit Náttúrufræðistofnunar*, **35**: 1–34.
- Beier, M. 1930. Pseudoscorpione aus Marocco nebst einer Art von der Insel Senafir. *Bulletin de la Société des Sciences Naturelles du Maroc*, **10**: 70–77.
- Beier, M. 1932. Pseudoscorpionidea I. Subord. Chthoniinea et Neobisiinea. *Tierreich*, **57**: i–xx, 1–258.
- Beier, M. 1939. Die Höhlenpseudoscorpione der Balkanhalbinsel. *Studien aus dem Gebiete der Allgemeinen Karstforschung, der Wissenschaftlichen Höhlenkunde, der Eiszeitforschung und den Nachbargebieten*, **4**(10): 1–83.
- Beier, M. 1953. *Neobisium* (*Blothrur*) *patrizii*, ein neuer Höhlen-Pseudoscorpion aus Mittelitalien. *Bollettino della Società Entomologica Italiana*, **83**: 139–140.
- Beier, M. 1955a. *Neobisium* (*Blothrur*) *cerrutii*, ein weiterer neuer Höhlen-Pseudoscorpion aus Lazio. *Fragmenta Entomologica*, **2**: 25–28.
- Beier, M. 1955b. Pseudoscorpione im baltischen Bernstein aus dem Geologischen Staatsinstitut in Hamburg. *Mitteilungen aus dem Mineralogisch-Geologischen Staatsinstitut in Hamburg*, **24**: 48–54.
- Beier, M. 1956. Ein neuer *Blothrur* (Pseudoscorp.) aus Sardinien, und ueber zwei Pseudoscorpione des westmediterranen Litorals. *Fragmenta Entomologica*, **2**: 55–63.
- Beier, M. 1961. Pseudoscorpione von den Azoren und Madeira. *Boletim do Museu Municipal do Funchal*, **14**: 67–74.
- Beier, M. 1963. Ordnung Pseudoscorpionidea (Afterscorpione). In: *Bestimmungsbücher zur Bodenfauna Europas*, vol. 1. vi, 313 pp. Akademie-Verlag, Berlin.
- Callaini, G. 1988. Gli Pseudoscorpioni del Marocco. (Notulae Chernetologicae, XXVII). *Annali del Museo Civico di Storia Naturale di Genova*, **87**: 31–66.
- Caporiacco, L. di. 1948. *Troglohyphantes zorzii* nuova specie cavernicola veronese e notizie su altri ragni cavernicoli veronesi. *Memorie del Museo Civico di Storia Naturale di Verona*, **1**: 237–239.
- Chamberlin, J.C. 1930. A synoptic classification of the false scorpions or chela-spinners, with a report on a cosmopolitan collection of the same. Part II. The Diplosphyronida (Arachnida-Chelonethida). *Annals and Magazine of Natural History*, (10)**5**: 1–48, 585–620.
- Chamberlin, J.C. 1931. The arachnid order Chelonethida. *Stanford University Publications, Biological Sciences*, **7**(1): 1–284.
- Ćurčić, B.P.M. 1972. *Neobisium* (*Blothrur*) *stankovici*, nouvelle espèce de pseudoscorpions cavernicoles de la Serbie orientale. *Fragmenta Balcanica*, **9**: 85–96.

- Ćurčić, B.P.M. 1984. The genus *Neobisium* Chamberlin, 1930 (Neobisiidae, Pseudoscorpiones, Arachnida): on new species from the USSR and the taxonomy of its subgenera. *Glasnik Muzeja Srpske Zemlje, Beograd (B)*, **39**: 124–153.
- Ćurčić, B.P.M. 1988. *Cave-dwelling pseudoscorpions of the Dinaric karst*. 192 pp. Slovenska Akademija Znanosti in Umetnosti, Ljubljana.
- Ćurčić, B.P.M., Dimitrijević, R.N. & Legakis, A. 2004. *The pseudoscorpions of Serbia, Montenegro, and the Republic of Macedonia*. 400 pp. Institute of Zoology, Faculty of Biology, University of Belgrade, Belgrade & Athens.
- Delfosse, E. 2003. Catalogue préliminaire des Pseudoscorpions de France métropolitaine (Arachnida Pseudoscorpiones). *Bulletin de Phyllie*, **17**: 24–48.
- Dimitrijević, R.N. 2004. Postembryonic development and polymorphism in some pseudoscorpions from the families Chthoniidae and Neobisiidae (Pseudoscorpiones, Arachnida). *Monographs, Institute of Zoology, Faculty of Biology, University of Belgrade*, **10**: 1–146.
- Dimitrijević, R.N. 2009. *Neobisium bozidarcucici* (Neobisiidae, Pseudoscorpiones), a new endemic cave pseudoscorpion from Montenegro. *Archives of Biological Sciences, Belgrade*, **61**: 323–328.
- Ducháč, V. 1996. Über *Neobisium (Blothrur) slovacum* (Pseudoscorpiones: Neobisiidae) aus der Brzotín – Höhle in der Slowakischen Republik. *Klapalekiana*, **32**: 153–157.
- Gardini, G. 2000. Catalogo degli Pseudoscorpioni d'Italia (Arachnida). *Fragmenta Entomologica*, **32**, Supplemento: 1–181.
- Geoffroy, E.L. 1762. *Histoire abrégée des insectes qui se trouvent aux environs de Paris; dans laquelle ces animaux sont rangés suivant un ordre méthodique*, vol. 2. Durand, Paris.
- Gulička, J. 1977. *Neobisium (Blothrur) slovacum* sp. n., eine neue Art des blinden Höhlentafterskorpions aus der Slowakei (Pseudoscorpionida). *Annotationes Zoologicae et Botanicae*, **117**: 1–9.
- Hadži, J. 1940. Eine neue Art von Höhlen-Pseudoskorpioniden aus Südserbien. *Neobisium (Blothrur) ohridanum* sp. n. *Glasnik Skopskog Naucnog Drustva*, **22**: 129–135.
- Harvey, M.S. 1985. The priority of *Blothrur* Schiödt, 1847, over *Neobisium* Chamberlin, 1930 (Neobisiidae: Pseudoscorpionida). *Bulletin of the British Arachnological Society*, **6**: 367–368.
- Harvey, M.S. 1991. *Catalogue of the Pseudoscorpionida*. vi, 726 pp. Manchester University Press, Manchester.
- Harvey, M.S. 2009a. Order Pseudoscorpiones in Bisby, F.A., Roskov, Y.R., Orrell, T.M. et al. (Eds.), *Species 2000 & ITIS Catalogue of Life: 2009 Annual Checklist*, Reading, U.K. (Accessed on 13 August 2010).
- Harvey, M.S. 2009b. *Pseudoscorpions of the World, version 1.2*. Western Australian Museum, Perth. <http://www.museum.wa.gov.au/arachnids/pseudoscorpions/>. Accessed on 13 August 2010.
- Harvey, M.S. 2010. Fauna Europaea: order Pseudoscorpiones. Fauna Europaea version 2.2. <http://www.faunaeur.org>. Accessed on 13 August 2010.
- Hermann, J.F. 1804. *Mémoire aptérologique*. 144 pp. F.G. Levrault, Strasbourg.
- Henderickx, H. 1999. Naamlijst van de Belgische pseudoschorpioenen (Arachnida Pseudoscorpionida). *Bulletin de la Societe Royale Belge d'Entomologie*, **135**: 66–71.
- Heurtault-Rossi, J. 1966. Description d'une nouvelle espèce: *Neobisium (N.) caporiaccoi* (Arachnides, Pseudoscorpions, Neobisiidae) de la Province de Belluno, en Italie. *Bulletin du Muséum National d'Histoire Naturelle, Paris*, (2)**38**: 606–628.
- Heurtault, J. 1968. Une nouvelle espèce de pseudoscorpion du Gard: *Neobisium (N.) vachoni* (Neobisiidae). *Bulletin du Muséum National d'Histoire Naturelle, Paris*, (2)**40**: 315–319.
- Heurtault, J. 1971. Une nouvelle espèce cavernicole de Suisse *Neobisium (N.) helveticum* (Arachnide, Pseudoscorpion, Neobisiidae). *Revue Suisse de Zoologie*, **78**: 903–907.
- Heurtault, J. 1990. Les Pseudoscorpions d'Algérie de la collection Biospeologica. *Mémoires de Biospéologie*, **17**: 197–202.
- Heurtault, J. 1994. Pseudoscorpions. In Juberthie, C. & Decu, V. (Eds.), *Encyclopaedia biospeologica*, vol. 1. Pp. 185–196. Société de Biospéologie, Moulis & Bucarest.
- Illiger, J.K.W. 1798. *Verzeichniss der Käfer Preussens*. J.J. Bauer, Halle.

- Jones, P.E. 1980. *Provisional atlas of the Arachnida of the British Isles. Part 1. Pseudoscorpiones*. 27 pp. Institute of Terrestrial Ecology, Monks Wood.
- Judson, M.L.I. 1992. *Roncocreagris murphyorum* n. sp. and *Occitanobisium nanum* (Beier) n. comb. (Neobisiidae) from Iberia, with notes on the sternal glands of pseudoscorpions (Chelonethi). *Bulletin of the British Arachnological Society*, **9**: 26–30.
- Judson, M.L.I. 1997. Catalogue of the pseudoscorpion types (Arachnida: Chelonethi) in the Natural History Museum, London. *Occasional Papers on Systematic Entomology*, **11**: 1–54.
- Judson, M.L.I. 2003. Baltic amber pseudoscorpions (Arachnida, Chelonethi): a new species of *Neobisium* (Neobisiidae) and the status of *Obisium rathkii* Koch & Berendt. *Geodiversitas*, **25**: 445–450.
- Kárpáthegy, P. 2007. Check list of the Hungarian Pseudoscorpiones. *Folia Historico Naturalia Musei Matraensis*, **31**: 91–97.
- Kempe, St., Hubrich, H.-P. & Suckstorff, K. 2006. The history of Postojnska Jama: The 1748 Joseph Nagel inscription in Jama near Predjama and Postojnska Jama. *Acta Carsologica*, **35**: 155–162.
- Kew, H.W. 1911. A synopsis of the false scorpions of Britain and Ireland. *Proceedings of the Royal Irish Academy (B)*, **29**: 38–64.
- Krumpál, M. 1983. *Neobisium* (N.) *vilcekii* sp. n., ein neuer Pseudoscorpion aus der USSR (Neobisiidae, Pseudoscorpiones). Über Pseudoscorpioniden-Fauna der UdSSR IV. *Biológia*, **38**: 607–612.
- Kunt, K.B., Bayram, A., Yağmur, E.A. & Danisman, T. 2008. Checklist of the pseudoscorpions of Turkey (Pseudoscorpionida; Arachnida). *Turkish Journal of Arachnology*, **1**: 70–84.
- Lapschoff, I.I. 1940. Biospelogica Sovietica. V. [Die Höhlen-Pseudoscorpiones Transkaukasiens]. *Byulleten' Moskovskogo Obshchestva Ispytatelei Prirody, Biologii, n.s.*, **49**: 61–74.
- Leach, W.E. 1817. *The zoological miscellany; being descriptions of new or interesting animals*, vol. 3. Nodder, London.
- Leclerc, P. 1982. Une nouvelle espèce de Pseudoscorpion cavernicole de la Drôme: *Neobisium* (*Blothrus*) *auberti* (Pseudoscorpions, Arachnides). *Revue Arachnologique*, **4**: 39–45.
- Leclerc, P. 1989. *Neobisium* (N.) *atlasense* nouvelle espèce de Neobisiidae cavernicole du Maroc (Pseudoscorpions, Arachnides). *Revue Arachnologique*, **8**: 45–51.
- Legg, G. & Jones, R.E. 1988. *Synopses of the British fauna (new series)*. 40. *Pseudoscorpions* (Arthropoda; Arachnida). 159 pp. Brill/Backhuys, Leiden.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Lohmander, H. 1939. Zur Kenntnis der Pseudoskorpionfauna Schwedens. *Entomologisk Tidskrift*, **60**: 279–323.
- Mahnert, V. 1972. *Neobisium* (*Blothrus*) *kwartirnikovi* nov. spec. (Pseudoscorpionidea) aus Bulgarien. *Archives des Sciences, Genève*, **24**: 383–389.
- Mahnert, V. 1981. Die Pseudoskorpione (Arachnida) Kenyas. I. Neobisiidae und Ideoroncidae. *Revue Suisse de Zoologie*, **88**: 535–559.
- Mahnert, V. 1988. *Neobisium carcinoides* (Hermann, 1804) (Pseudoscorpionida, Neobisiidae) – une espee polymorphe? *Comptes Rendus X^{ème} Colloque Europeen Arachnologie. Bulletin de la Société de Sciences de Bretagne*, **59**: 161–174.
- Mahnert, V. 2004. Die Pseudoskorpione Österreichs (Arachnida, Pseudoscorpiones). *Denisia*, **12**: 459–471.
- Ozimec, R. 2004. List of Croatian pseudoscorpion fauna (Arachnida, Pseudoscorpiones). *Natura Croatica*, **13**: 381–394.
- Rafalski, J. 1937. *Neobisium* (*Neobisium*) *polonicum* nov. spec. Nowy gatunek zaleszczotka (Pseudoscorpionidea). *Prace Komisji Matematyczno-Przyrodniczej, Poznanskie Towarzystwo Przyjaciół Nauk B*, **8**: 159–172.
- Rafalski, J. 1967. Zaleszczotki. Pseudoscorpionidea. In *Katalog Fauny Polski*, vol. 32 (1). Pp. 1–34. Polska Akademia Nauk, Warszawa.
- Redikorzev, V. 1949. [Pseudoscorpionidea of Central Asia]. *Travaux de l'Institut de Zoologique de l'Académie Sciences de l'U.R.S.S.*, **8**: 638–668.
- Roewer, C.F. 1937. Chelonethi oder Pseudoskorpione in Bronns, H.G. (Ed.), *Bronn's Klassen und Ordnungen des Tierreichs*, vol. 5(IV)(6)(1). Pp. 161–320. Akademische Verlagsgesellschaft M.B.H., Leipzig.

- Schawaller, W. 1985a. Liste griechischer Neobisiidae mit neuen Höhlenfunden in Epirus, auf Samos und Kreta (Arachnida: Pseudoscorpiones). *Stuttgarter Beiträge zur Naturkunde (A)*, **386**: 1–8.
- Schawaller, W. 1985b. Pseudoskorpione aus der Sowjetunion (Arachnida: Pseudoscorpiones). *Stuttgarter Beiträge zur Naturkunde (A)*, **385**: 1–12.
- Schawaller, W. 1989. Pseudoskorpione aus der Sowjetunion, Teil 3 (Arachnida: Pseudoscorpiones). *Stuttgarter Beiträge zur Naturkunde (A)*, **440**: 1–30.
- Schawaller, W. & Dashdamirov, S. 1988. Pseudoskorpione aus dem Kaukasus, Teil 2 (Arachnida). *Stuttgarter Beiträge zur Naturkunde (A)*, **415**: 1–51.
- Schiödte, J.C. 1847. Undersøgelser over den underjordiske Fauna i Hulerne i Krain og Istrien. *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlingar*, **6**: 75–81.
- Schiödte, J.C. 1851a. Bidrag til den underjordiske Fauna. *Kongeligt Dansk Videnskabernes Selskabs Skrifter*, Kjøbenhavn, (5)**2**: 1–39.
- Schiödte, J.C. 1851b. Specimen faunae subterraneae; being a contribution towards the subterranean fauna. *Transactions of the Royal Entomological Society of London, New Series*, **1**: 134–157.
- Steup, B. 2006. Zur Morphologie von *Neobisium carcinoides* (Hermann, 1804) aus Mecklenburg-Vorpommern (Arachnida: Chelonethi). *Archiv der Freunde der Naturgeschichte in Mecklenburg*, **45**: 93–111.
- Sundevall, C.J. 1833. *Conspectus arachnidum*. 39 pp. C.F. Berling, Londini Gothorum.
- Talvi, T. 2010. Puhtu ebaskorpionilised (Arachnida: Pseudoscorpiones). *Estonia Maritima*, **8**: 127–132.
- Tooren, D. van den. 2005. Naamlijst en determinatiesleutel tot de Pseudoschorpioenen van Nederland (Arachnida: Pseudoscorpiones). *Nederlandse Faunistische Mededelingen*, **23**: 91–102.
- Vachon, M. 1947. A propos de quelques Pseudoscorpions (Arachnides) des cavernes de France, avec description d'une espèce nouvelle: *Neobisium (Blothrux) tuzeti*. *Bulletin du Muséum National d'Histoire Naturelle, Paris*, (2)**19**: 318–321.
- Vachon, M. 1966. Quelques remarques sur le genre *Neobisium* J.C. Chamberlin (Arachnides, Pseudoscorpions, Neobisiidae) à propos d'une espèce nouvelle *Neobisium (N.) gineti*, habitant les cavernes de l'est de la France. *Bulletin du Muséum National d'Histoire Naturelle, Paris*, (2)**37**: 645–658.
- Vachon, M. 1976. Quelques remarques sur les Pseudoscorpions (Arachnides) cavernicoles de la Suisse à propos de la description de deux espèces nouvelles: *Neobisium (N.) aelleni* et *Neobisium (N.) strausaki*. *Revue Suisse de Zoologie*, **83**: 243–253.
- Vachon, M. & Gabbutt, P.D. 1964. Sur l'utilisation des soies flagellaires chélicériennes dans la distinction des genres *Neobisium* J.C. Chamberlin et *Roncus* L. Koch (Arachnides, Pseudoscorpions, Neobisiidae). Importance d'une connaissance précise de la genèse d'un caractère pour en déceler la valeur taxonomique. *Bulletin de la Société Zoologique de France*, **89**: 174–188.
- Verner, P.H. 1958. *Neobisium (Neobisium) crassifemoratum* (Beier), ein neuer Pseudoskorpion für die Fauna der Tschechoslowakei. *Acta Faunistica Entomologica Musei Nationalis Pragae*, **3**: 109–110.
- Verner, P.H. 1960. Příspěvek k poznání štírků Československa. *Vestník Československé Zoologické Společnosti v Praze*, **24**: 167–169.
- Verner, P.H. 1971. Štírci – Pseudoscorpionidea, Pp.19–31 in Daniel, M. & Černý, V. (Eds.), *Klíč Zvířeny ČSSR*, vol. 4. Československá Akademie Věd, Praha.
- Westwood, J.O. 1836. Cheliferidae in Partington, C.F. (Ed.), *British cyclopaedia of natural history*, vol. 2. P. 10. Orr & Smith, London.
- Zaragoza, J.A. 2007. Catálogo de los Pseudoescorpiones de la Península Ibérica e Islas Baleares (Arachnida: Pseudoscorpiones). *Revista Ibérica de Aracnología*, **13**: 3–91.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3537**ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 (Insecta, Coleoptera, STAPHYLINIDAE, ALEOCHARINAE): proposed conservation**

Vladimir I. Gusarov

National Center for Insect Biodiversity and National Center for Biosystematics, Natural History Museum, University of Oslo, PO Box 1172 Blindern, NO-0318 Oslo, Norway (e-mail: vladimir.gusarov@nhm.uio.no)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the family-group names ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 for a group of rove beetles. The names are threatened by a little used senior synonym CALLICERINI Jakobson, 1908. The name ATHETINI Casey, 1910 has become widely accepted and is in prevailing usage. The names CALLICERINI Jakobson, 1908 (Insecta, Coleoptera) and CALLICERINI Rondani, 1845 (Insecta, Diptera) are homonyms resulting from similarity of the names of their type genera, *Callicerus* Gravenhorst, 1802 and *Callicera* Panzer, 1809, respectively. This homonymy should be removed as required by Article 55.3.1 of the Code. It is proposed that the name CALLICERINI Jakobson, 1908 be suppressed.

Keywords. Nomenclature; taxonomy; Coleoptera; STAPHYLINIDAE; ALEOCHARINAE; CALLICERINI; CALLICERINA; ATHETINI; ATHETINA; GEOSTIBINA; *Callicerus*; *Atheta*; *Geostiba*; *Callicerus obscurus*; *Atheta graminicola*; *Geostiba circellaris*; Diptera; SYRPHIDAE; *Callicera*; *Callicera aenea*; rove beetles; Palaeartic.

1. Panzer (1809, p. 17) established the genus *Callicera* for a species of fly. The type species is *Bibio aenea* Fabricius, 1777 (p. 305), by monotypy.

2. Rondani (1845, p. 451) established the family-group name CALLICERINI (spelled as Calicerellae) at the rank of 'linea' for a group of syrphids, without listing any genera. Considering the stem of the name Calicerellae and Rondani's subsequent publications (e.g. 1856, p. 55) it is clear that he based his family-group name on the genus *Callicera* Panzer, 1809.

3. The name CALLICERINI Rondani, 1845 is currently in use as a valid name for a tribe of syrphids (e.g. Sabrosky, 1999, p. 72; Rotheray & Gilbert, 1999, p. 4; Cheng et al., 2000, p. 147; Ståhls et al., 2003, p. 436; Bartsch, 2009, p. 42).

4. Gravenhorst (1802, p. 65) established the genus *Callicerus* for a species of staphylinid beetle. The type species is *Callicerus obscurus* Gravenhorst, 1802 (p. 66), by monotypy.

5. In a key to subfamilies and tribes of rove beetles, Jakobson (1908, p. 448) established the tribe CALLICERINI (spelled as Callicerina) without listing any genera included in that tribe. The 1908 publication is part 6 of a work published in eleven parts. In the next part of that work (part 7) Jakobson (1909, p. 537) used the name CALLICERINI Jakobson, 1908 (spelled as Callicerina) as the valid name for the tribe MYRMEDONIINI Thomson, 1867 (p. 209), without explaining why he considered the

senior name to be invalid. The name CALLICERINI Jakobson, 1908 was overlooked by subsequent staphylinid researchers and was not used again until 1967.

6. Thomson (1858, p. 36) established the genus *Atheta* for a group of staphylinid beetles. The type species is *Aleochara graminicola* Gravenhorst, 1806 (p. 176), by monotypy, as fixed by a ruling in Opinion 600 (BZN 18: 241–243, August 1961). The name *Atheta* Thomson, 1858 was placed on the Official List of Generic names in Zoology by a ruling in Opinion 600 (BZN 18: 241–243, August 1961).

7. Casey (1910, p. 2) established the tribe ATHETINI (spelled as Athetae) for the genus *Atheta* Thomson, 1858 and related genera of aleocharine staphylinids.

8. Thomson (1858, p. 33) established the rove beetle genus *Geostiba*. The type species by monotypy is *Aleochara circellaris* Gravenhorst, 1806 (p. 155), fixed by a ruling in Opinion 2098 (BZN 62: 43–44, March 2005). The name *Geostiba* Thomson, 1858 was placed on the Official List of Generic names in Zoology by a ruling in Opinion 2098 (BZN 62: 43–44, March 2005).

8. Seevers (1978, p. 126) established the subtribe GEOSTIBINA for *Geostiba* Thomson, 1858 and six additional genera of aleocharine staphylinids.

9. The name CALLICERINI Jakobson, 1908 is a junior homonym of the name CALLICERINI Rondani, 1845, as a result of similarity between the names of their type genera, *Callicerus* Gravenhorst, 1802 and *Callicera* Panzer, 1809, respectively. The senior name is a valid name currently in use, and therefore Article 55.3.1.1 does not apply. According to Article 55.3.1 the case must be referred to the Commission for a ruling to remove the homonymy. Considering that the name CALLICERINI Rondani, 1845 is the senior homonym and valid name currently in use, an emendation of spelling of the name CALLICERINI Rondani, 1845 would not promote the stability of nomenclature and should be avoided. Whatever course of action is taken, it should focus on the name CALLICERINI Jakobson, 1908. In order to propose a solution promoting the stability of the rove beetle nomenclature, the recent use of the family-group names ATHETINI, CALLICERINI Jakobson, 1908 and GEOSTIBINA must be examined, because the names ATHETINI and CALLICERINI Jakobson, 1908 are usually treated as synonyms at the rank of tribe (but not subtribe), while CALLICERINA Jakobson, 1908 and GEOSTIBINA have been treated as synonyms at the rank of subtribe (see 14 and 15).

10. Horion (1967, pp. iii, 220) used the tribe name CALLICERINI (cited ‘*sensu* Lohse i. 1. 1966’) without referring to Jakobson’s earlier use of that name (Jakobson, 1908, 1909), but without explicitly introducing the name as new either. Horion was aware of Jakobson’s works (1908, 1909) and listed them in references. As interpreted by Newton & Thayer (1992, p. 47) Horion introduced a new name CALLICERINI Horion, 1967. An alternative interpretation could be that Horion used the name CALLICERINI Jakobson, 1908. According to the list of references in Horion’s work, ‘Lohse i. 1. 1966’ is the manuscript of the work which was scheduled to be published in 1969, and was in fact published in 1974 (Lohse, 1974; Benick & Lohse, 1974).

11. Lohse (1969, pp. 173, 174, 175) used the name CALLICERINI for a tribe accommodating most of the Central European genera formerly placed in MYRMEDONINI Thomson, 1867. He argued that CALLICERINI and not ATHETINI should be used as the valid name for the tribe, because *Callicerus* is the oldest genus name in that tribe. This line of argument is not justified by the Code. Lohse (1969) did not refer to Jakobson’s (1908, 1909) or Horion’s (1967) earlier use of the name CALLICERINI, nor

did he explicitly introduce the name *CALLICERINI* as new. As interpreted by Newton & Thayer (1992, p. 47) Lohse introduced a new name *CALLICERINI* Lohse, 1969. An alternative interpretation could be that Lohse used the name *CALLICERINI* Jakobson, 1908 or *CALLICERINI* Horion, 1967.

12. In a part of the work referred to by Horion (1967) as 'Lohse 1966 i. l.', Benick & Lohse (1974, p. 72) used the tribe name *CALLICERINI* as valid and *ATHETINI* (spelled as *Athetae*) as its invalid synonym, without providing any explanation for this decision. The work by Benick & Lohse (1974) is widely used, as it contains the most complete and up-to-date keys to Central European genera and species of the tribe. Immediately after the publication of that work, the tribe name *CALLICERINI* began to be frequently used as valid. This practice continued until 1990–1991, when most taxonomists switched to using *ATHETINI* as the valid name for the tribe (see 14).

13. Newton & Thayer (1992) drew attention to homonymy of the names *CALLICERINI* Jakobson, 1908 (Coleoptera) and *CALLICERINI* Rondani, 1845 (Diptera), pointing out that the case must be referred to the Commission and suggesting that the Commission could either suppress the junior name or change the stem of one homonym. Newton & Thayer (1992) further demonstrated that suppression or non-suppression of the name *CALLICERINI* Jakobson, 1908 might affect the validity of the much more widely used family-group name *ATHETINI* Casey, 1910, and argued that for rove beetles the relative merit of the two alternative solutions to the problem posed by the homonymy depends on the taxonomic situation within the group. They left it to the specialists in aleocharine rove beetles to submit an appropriate application to the Commission.

14. At the rank of tribe the names *CALLICERINI* Jakobson, 1908 and *ATHETINI* have always been treated as synonyms, whether explicitly (e.g. by listing both names as synonyms) or implicitly (e.g. by listing the type genus of one of the two tribes as a member of the other). After the use of the rove beetle name *CALLICERINI* had been resumed by Horion (1967), Lohse (1969) and Benick & Lohse (1974), it was used as a valid tribe name in at least 37 papers by at least 10 authors during the period between 1975 and 2010 (e.g. Kistner, 1976, p. 83; Yosii & Sawada, 1976, p. 12; Muona, 1979, p. 23; Pace, 1982, p. 75; 1991, p. 136; Kofler & Benick, 1983, p. 146; Haghebaert, 1990, p. 91; Stourac & Krasensky, 2002, p. 263; a full list has been submitted to the Commission Secretariat). In three additional papers (Lohse, 1989, p. 199; Lohse et al., 1990, p. 123; Elven et al., 2010, p. 87) it was used as a valid subtribe but not tribe name. During the same period of time, the name *ATHETINI* was used as valid tribe name in at least 93 papers by at least 22 authors (in fact, many more) (e.g. Pace, 1983a, p. 185; 1993, p. 72; 2009, p. 26; Lohse & Smetana, 1985, p. 281; Lohse et al., 1990, p. 123; Ahn & Ashe, 1992, p. 347; Assing, 2001, p. 252; Gusarov, 2004, p. 14; a full list has been submitted to the Commission Secretariat). Further, after 1991 the name *CALLICERINI* was used as valid only in 2 papers by 3 authors, while the name *ATHETINI* was used as the valid tribe name in at least 89 papers by 21 authors, including the widely used Palaearctic catalogue (Smetana, 2004, p. 362). This means that the stability of nomenclature will be better served by suppressing the name *CALLICERINI* Jakobson, 1908, than by simply emending it to remove the homonymy with the name *CALLICERINI* Rondani, 1845. If the name *CALLICERINI* Jakobson, 1908 were emended, it would become the oldest available

name for the tribe, and the much more widely used name *ATHETINI* would become invalid.

15. In the very few cases (6 papers by 11 authors) where the name *CALLICERINA* Jakobson, 1908 was used at the rank of subtribe, whether as valid (Muona, 1979, p. 23; Pace, 1985b, p. 170 (spelled as *Callicerinae*); Lohse, 1989, p. 199; Lohse et al., 1990, p. 123; Elven et al., 2010, p. 87), or invalid (Newton & Thayer, 1992, p. 47), it was always treated as a subtribe separate from *ATHETINA*. Therefore, a name for the subtribe that includes the genus *Callicerus* but not *Atheta* is still needed. As pointed out by Newton & Thayer (1992, p. 47) another available name exists for this subtribe, *GEOSTIBINA* Seevers, 1978. Several papers suggest (e.g. Yosii & Sawada, 1976; Muona, 1979) that the genera *Callicerus* and *Geostiba* are related, and it is highly unlikely that they will ever be placed in different subtribes. That means that the family-group name that includes *Callicerus*, but not *Geostiba*, will not be needed. At the rank of subtribe, the name *GEOSTIBINA* has been used as valid name in 9 papers by 11 authors (Seevers, 1978, p. 126; Pace 1983b, p. 97; 1984a, p. 316; 1984b, p. 215; 1985a, p. 98; Newton & Thayer, 1992, p. 47; Newton et al., 2000, p. 370; Gouix & Klimaszewski, 2007, p. 97; Elven et al., 2010, p. 87). Considering the history of usage of *CALLICERINA* and *GEOSTIBINA*, the stability of nomenclature will be better served if the name *CALLICERINI* Jakobson, 1908 is suppressed altogether, rather than emended to remove homonymy with *CALLICERINI* Rondani, 1845, even with the endorsement that *CALLICERINI* Jakobson, 1908 is not to be given priority over the family-group name *ATHETINI* Casey, 1910.

16. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress for the purposes of both the Principle of Priority and the Principle of Homonymy the following names:
 - (a) *CALLICERINI* Jakobson, 1908;
 - (b) *CALLICERINI* Horion, 1967;
 - (c) *CALLICERINI* Lohse, 1969;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Callicera* Panzer, 1809 (gender: feminine), type species by monotypy *Bibio aenea* Fabricius, 1777;
 - (b) *Callicerus* Gravenhorst, 1802 (gender: masculine), type species by monotypy *Callicerus obscurus* Gravenhorst, 1802;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *aenea* Fabricius, 1777, as published in the binomen *Bibio aenea* Fabricius, 1777 (specific name of the type species of *Callicera* Panzer, 1809);
 - (b) *obscurus* Gravenhorst, 1802, as published in the binomen *Callicerus obscurus* Gravenhorst, 1802 (specific name of the type species of *Callicerus* Gravenhorst, 1802);
- (4) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) *CALLICERINI* Rondani, 1845, type genus *Callicera* Panzer, 1809 (Insecta, Diptera);
 - (b) *ATHETINI* Casey, 1910, type genus *Atheta* Thomson, 1858 (Insecta, Coleoptera);

- (c) GEOSTIBINA Seevers, 1978, type genus *Geostiba* Thomson, 1858 (Insecta, Coleoptera);
- (5) to place on the Official List of Rejected and Invalid Family-Group Names in Zoology the following names:
 - (a) CALLICERINI Jakobson, 1908 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) (a) above;
 - (b) CALLICERINI Horion, 1967 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) (b) above;
 - (c) CALLICERINI Lohse, 1969 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) (c) above.

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References

- Ahn, K-J. & Ashe J.S. 1992. Revision of the intertidal aleocharine genus *Pontomalota* Casey (Coleoptera: Staphylinidae) with a discussion of its phylogenetic relationships. *Entomologica Scandinavica*, **23**: 347–359.
- Assing, V. 2001. A revision of *Callicerus* Gravenhorst, 1802, *Pseudosemiris* Machulka, 1935, and *Saphocallus* Sharp, 1888 (Coleoptera, Staphylinidae, Aleocharinae, Athetini). *Beiträge zur Entomologie*, **51**(2): 247–334.
- Bartsch, H. 2009. *Tvåvingar: Blomflugor. Diptera: Syrphidae: Eristalinae & Microdontinae. Nationalnyckeln till Sveriges flora och fauna*. 478 pp. Artdatabanken, Uppsala.
- Benick, G. & Lohse, G.A. 1974. 14. Tribus: Callicerini (Athetae). Pp. 72–220 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas. Band 5, Staphylinidae II (Hypocyphtinae und Aleocharinae). Pselaphidae*. Goecke & Evers Verlag, Krefeld.
- Casey, T.L. 1910. New species of the staphylinid tribe Myrmedoniini. *Memoirs on the Coleoptera I*. Pp.1–183. The New Era Printing Company, Lancaster.
- Cheng, X., Lü, J., Huang, C., Zhou, H., Dai, Z & Zhang, G. 2000. Determination of phylogenetic position of Pipizini (Diptera: Syrphidae): based on molecular biological and morphological data. *Science in China (Series C)*, **43**(2): 146–156.
- Elven, H., Bachmann, L. & Gusarov, V.I. 2010. Phylogeny of the tribe Athetini (Coleoptera: Staphylinidae) inferred from mitochondrial and nuclear sequence data. *Molecular Phylogenetics and Evolution*, **57**: 84–100.
- Fabricius, J.C. 1777. *Genera insectorum: eorumque characteres naturales secundam numerum, figuram, situm et proportionem, omnium partium oris adiecta mantissa specierum nuper detectarum*. (xvi), 310 pp. Litteris Mich. Friedr. Bartschii, Chilonii [= Kiel].
- Gouix, N. & Klimaszewski, J. 2007. *Catalogue of aleocharine rove beetles of Canada and Alaska (Coleoptera, Staphylinidae, Aleocharinae)*. 165 pp. Pensoft, Sofia & Moscow.
- Gravenhorst, J.L.C. 1802. *Coleoptera Microptera Brunsvicensia nec non Exoticorum quotquot exstant in collectionibus Entomologorum Brunsvicensium*. lxvi, 207 pp. C. Reichard, Brunswick.
- Gravenhorst, J.L.C. 1806. *Monographia Coleopterorum Micropteriorum*. xvi, 248 pp. Henrich Dieterich, Göttingen.
- Gusarov, V.I. 2004. A revision of the genus *Lypoglossa* Fenyès, 1918 (Coleoptera: Staphylinidae: Aleocharinae). *Zootaxa*, **747**: 1–36.
- Haghebaert, G. 1990. *Plataraea verbekei* sp. n., a new Callicerini from Romania (Coleoptera, Staphylinidae, Aleocharinae). *Bulletin et Annales de la Société Royale Belge d'Entomologie*, **126**: 91–93.

- Horion, A.** 1967. *Faunistik der Mitteleuropäischen Käfer. Band XI: Staphylinidae. 3. Teil: Habrocerinae bis Aleocharinae (ohne Subtribus Athetae)*. xxiv, 419 pp. Überlingen-Bodensee.
- Jakobson, G.G.** 1908. *Zhuki Rossii i Zapadnoi Yevropy. Rukovodstvo k opredeleniyu zhukov. Vypusk 6*. Pp. 401–480, pls. 29, 34, 43, 47–51. A.F. Devrien, Sankt-Peterburg.
- Jakobson, G.G.** 1909. *Zhuki Rossii i Zapadnoi Yevropy. Rukovodstvo k opredeleniyu zhukov. Vypusk 7*. Pp. 481–560, pls. 52, 54–58, 60, 61. A.F. Devrien, Sankt-Peterburg.
- Kistner, D.H.** 1976. Revision and reclassification of the genus *Goniusa* Casey with a larval description and ant host records (Coleoptera: Staphylinidae). *Sociobiology*, **2**(1): 83–95.
- Kofler, A. & Benick G.** 1983. Sechster Beitrag zur Käferfauna des Lechtales (Tirol, Österreich) (Insecta: Coleoptera, Staphylinidae). *Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck*, **70**: 145–154.
- Lohse, G.A.** 1969. Vorschläge zur Änderung der Aleocharinensystematik (Coleoptera: Staphylinidae). Pp. 169–175 in *Bericht über die 10. Wanderversammlung deutscher Entomologen, 15. bis 19. September 1965 in Dresden*. Deutsche Akademie der Landwirtschaftswissenschaften zu Berlin, Berlin.
- Lohse, G.A.** 1974. 22. U.F.: Aleocharinae. Pp. 11–304 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas. Band 5, Staphylinidae II (Hypocyphitinae und Aleocharinae). Pselaphidae*. Goecke & Evers Verlag, Krefeld.
- Lohse, G.A.** 1989. Ergänzungen und Berichtigungen zu Freude-Harde-Lohse 'Die Käfer Mitteleuropas' Band 5 (1974). Pp. 185–243 in Lohse, G.A. & Lucht, W.H. *Die Käfer Mitteleuropas. 1. Supplementband mit Katalogteil*. Goecke & Evers, Krefeld.
- Lohse, G.A., Klimaszewski, J. & Smetana, A.** 1990. Revision of Arctic Aleocharinae of North America (Coleoptera: Staphylinidae). *The Coleopterists Bulletin*, **44**(2): 121–202.
- Lohse, G.A. & Smetana, A.** 1985. Revision of the types of species of Oxypodini and Athetini (*sensu* Seevers) described by Mannerheim and Mäklin from North America (Coleoptera: Staphylinidae). *The Coleopterists Bulletin*, **39**(3): 281–300.
- Muona, J.** 1979. Staphylinidae. Pp. 14–28 in Silfverberg, H. *Enumeratio Coleopterorum Fennoscandiae et Daniae*. Helsingin Hyönteisvaihtoyhdistys, Helsinki.
- Newton, A.F. & Thayer, M.K.** 1992. Current classification and family-group names in Staphyliniformia (Coleoptera). *Fieldiana: Zoology, New Series*, **67**: i–iv, 1–92 pp.
- Newton, A.F., Thayer, M.K., Ashe, J.S. & Chandler, D.S.** 2000. Staphylinidae Latreille, 1802. Pp. 272–418 in Arnett, R.H. & Thomas, M.C. (Eds.), *American beetles. Vol. 1. Archostemata, Myxophaga, Adephaga, Polyphaga: Staphyliniformia*. CRC Press, Boca Raton, Florida.
- Pace, R.** 1982. Studio su alcune specie iberische e magrebine di *Atheta* del sottogenere *Microdota* Muls. & Rey (Coleoptera Staphylinidae). *Giornale Italiano di Entomologia*, **1**: 73–83.
- Pace, R.** 1983a. Il genere *Tropimenelytron* Scheerpeltz (Coleoptera, Staphylinidae). *Nouvelle Revue d'Entomologie*, **13**(2): 185–190.
- Pace, R.** 1983b. Aleocharinae orofile del Venezuela raccolte dal prof. Franz. I. Bolitocharinae & Callicerini Geostibae (Coleoptera Staphylinidae). *Bollettino della Società Entomologica Italiana, Genova*, **115**(4–7): 91–102.
- Pace, R.** 1984a. Aleocharinae dell'Himalaya. LI. Contributo alla conoscenza delle Aleocharinae (Coleoptera, Staphylinidae). *Annales de la Société Entomologique de France (N.S.)*, **20**(3): 309–339.
- Pace, R.** 1984b. Nuove Aleocharinae microftalme mediterranee e dell'Iran, del Muséum d'Histoire Naturelle di Ginevra (Coleoptera Staphylinidae). *Archives des Sciences (Genève)*, **37**(2): 211–219.
- Pace, R.** 1985a. Aleocharinae riportate dall'Himalaya dal Prof. Franz. Parte I. (Coleoptera Staphylinidae). *Nouvelle Revue d'Entomologie (N. S.)*, **2**(1): 91–105.
- Pace, R.** 1985b. Aleocharinae dell'Himalaya raccolte da Guillaume de Rougemont (Coleoptera Staphylinidae). *Bollettino del Museo Civico di Storia Naturale di Verona*, **12**: 165–191.
- Pace, R.** 1991. Aleocharinae dello Yemen (Coleoptera, Staphylinidae). *Bollettino del Museo Civico di Storia Naturale di Verona*, **15**: 125–150.

- Pace, R.** 1993. Aleocharinae della Cina (Coleoptera, Staphylinidae). *Bollettino del Museo Civico di Storia Naturale di Verona*, **17** [1990]: 69–126.
- Pace, R.** 2009. Aleocharinae del Cile raccolte dal Dr P.M. Giachino (Coleoptera, Staphylinidae). *Lavori – Società Veneziana di Scienze Naturali*, **34**: 25–32.
- Panzer, G.W.F.** 1809. *Faunae insectorum Germanicae initiae oder Deutschlands Insecten. Heft 104*. 24 pp., 24 pls. Felssecker, Nurnberg.
- Rondani, C.** 1845. Ordinamento sistematico dei generi italiani degli insetti ditteri. *Nuovi Annali delle Scienze Naturali, Bologna*, (2)**2** [1844]: 443–459.
- Rondani, C.** 1856. *Dipterologiae Italicae prodromus, vol. 1*. 228 pp. A. Stoschi, Parma.
- Rotheray, G. & Gilbert, F.** 1999. Phylogeny of Palaearctic Syrphidae (Diptera): evidence from larval stages. *Zoological Journal of the Linnean Society*, **127**: 1–112.
- Sabrosky, C.W.** 1999. Family-group names in Diptera. *Myia*, **10**: 2–360.
- Seevers, C.H.** 1978. A generic and tribal revision of the North American Aleocharinae (Coleoptera: Staphylinidae). *Fieldiana: Zoology*, **71**: i–vi, 1–275.
- Smetana, A.** 2004. Subfamily Aleocharinae Fleming, 1821. Pp. 353–494 in Lobl, I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera*, vol. 2. *Hydrophyloidea–Histeroidea–Staphylinoidea*. Apollo Books, Stenstrup.
- Stourac, P. & Krasensky, P.** 2002. Faunistic records from the Czech Republic – 156. Coleoptera: Staphylinidae, Omaliinae: Omaliini, Oxytelinae: Oxytelini, Staphylininae: Staphylinini, Tachyporinae: Tachyporini, Aleocharinae: Homalotini, Aleocharinae: Bolitocharini, Aleocharinae: Callicerini. *Klapalekiana*, **38**(3–4): 263–265.
- Ståhl, G., Hipa, H., Rotherau, G., Muona, J & Gilbert, F.** 2003. Phylogeny of Syrphidae (Diptera) inferred from combined analysis of molecular and morphological characters. *Systematic Entomology*, **28**: 433–450.
- Thomson, C.G.** 1858. Försök till uppställning af Sveriges Staphyliner. *Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar*, **15**: 27–40.
- Thomson, C.G.** 1867. *Skandinaviens Coleoptera, synoptiskt bearbetade*, vol. 9. 408 pp. Lundbergiska Boktryckeriet, Lund.
- Yosii, R. & Sawada, K.** 1976. Studies on the genus *Atheta* Thomson and its allies (Coleoptera, Staphylinidae). II: Diagnostic characters of genera and subgenera with description of representative species. *Contributions from the Biological Laboratory, Kyoto University*, **25**(1): 11–140.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3539

***Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 (Insecta, Diptera, TACHINIDAE): proposed conservation of usage**

James E. O'Hara

Agriculture and Agri-Food Canada, 960 Carling Avenue, K.W. Neatby Building, Ottawa, Ontario, K1A 0C6, Canada
(e-mail: james.ohara@agr.gc.ca)

Neal L. Evenhuis

J. Linsley Gressitt Center for Entomological Research, Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817-2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)

Abstract. The purpose of this application, under Article 70.2 of the Code, is to conserve the current usage of the names *Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 for three well-established genera of tachinid flies. The type species of *Sturmia* has long been assumed to be *Sturmia vanessae* Robineau-Desvoidy, 1830 and the type species of *Senometopia* Macquart, 1834 has long been assumed to be *Carcelia aurifrons* Robineau-Desvoidy, 1830. However, the correct type species for both *Sturmia* and *Senometopia* is *Sturmia atropivora* Robineau-Desvoidy, 1830, which is currently recognised as a valid species of *Drino*. Acceptance of *S. atropivora* as the type species of *Sturmia* and *Senometopia* would change the current concept of those genera to that of *Drino*, and the names of the current genera *Sturmia* and *Senometopia* would change to those of the next available genus-group names. To avoid the nomenclatural instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Sturmia* Robineau-Desvoidy, 1830 prior to that of *Sturmia vanessae* Robineau-Desvoidy, 1830 by Robineau-Desvoidy (1863) be set aside, along with all type fixations for *Senometopia* Macquart, 1834 prior to that of *Carcelia aurifrons* Robineau-Desvoidy, 1830 by Townsend (1916).

Keywords. Nomenclature; taxonomy; Diptera; TACHINIDAE; *Sturmia*; *Senometopia*; *Drino*; *Sturmia vanessae*; *Carcelia aurifrons*; *Sturmia atropivora*; tachinid flies; cosmopolitan.

1. Robineau-Desvoidy (1830, p. 171) proposed the genus *Sturmia* for four new species: *S. atropivora* Robineau-Desvoidy, *S. floricola* Robineau-Desvoidy, *S. concolor* Robineau-Desvoidy and *S. vanessae* Robineau-Desvoidy. A type species was not designated.

2. Desmarest in d'Orbigny (1848, p. 77) designated *Sturmia atropivora* Robineau-Desvoidy, 1830 as the type species of *Sturmia*. This designation was overlooked by subsequent authors until relatively recently.

3. Robineau-Desvoidy (1863, p. 888) designated *Sturmia vanessae* Robineau-Desvoidy, 1830 as the type species of *Sturmia*. The universally-accepted concept of *Sturmia* is based on this type species designation. *Sturmia vanessae* is currently treated as a junior subjective synonym of *Tachina bella* Meigen, 1824; the accepted valid name of this taxon is *Sturmia bella*.

4. Macquart (1834, p. 296) proposed the genus *Senometopia* for 17 previously described species, including *S. atropivora* Robineau-Desvoidy, 1830. A type species was not designated.

5. Stephens in Richardson (1838, p. 478) designated *Sturmia atropivora* Robineau-Desvoidy, 1830 as the type species of *Senometopia*. As with *Sturmia*, this designation was overlooked by subsequent authors until relatively recently.

6. Townsend (1916, p. 8) designated *Carcelia aurifrons* Robineau-Desvoidy, 1830 as the type species of *Senometopia*. The universally accepted concept of *Senometopia* is based on this type species designation. *Carcelia aurifrons* is currently treated as a junior subjective synonym of *Tachina excisa* Fallén, 1820; the accepted valid name of this taxon is *Senometopia excisa*.

7. Evenhuis & Thompson (1990, p. 238) discovered the overlooked type species designation for *Sturmia* by Desmarest in d'Orbigny (1848). They suggested that 'Application to I.C.Z.N. for suppression of Desmarest's designation may be necessary to maintain stability of taxonomy and usage' (p. 238). More recently, O'Hara et al. (2009, p. 118) and Evenhuis et al. (2010, p. 154) called attention to Desmarest's designation and noted that an application to the International Commission on Zoological Nomenclature was in preparation to suppress any type designations for *Sturmia* prior to the one by Robineau-Desvoidy (1863, p. 888). This present application is the one alluded to by O'Hara et al. (2009) and Evenhuis et al. (2010).

8. Evenhuis & Thompson (1990, p. 237) discovered an overlooked type species designation for *Senometopia* of *Sturmia atropivora* Robineau-Desvoidy, 1830 by Desmarest in d'Orbigny (1848) and suggested that the designation be suppressed in favor of *Carcelia aurifrons* Robineau-Desvoidy, 1830. An earlier type species designation for *Senometopia* than the one by Desmarest has since been discovered (Evenhuis 2010): that of Stephens in Richardson (1838, p. 478) who similarly designated *Sturmia atropivora* Robineau-Desvoidy, 1830.

9. Nomenclatural instability would result from the adoption of *Sturmia atropivora* as the type species of *Sturmia* and *Senometopia*, as designated by Desmarest in d'Orbigny (1848) and Stephens in Richardson (1838), respectively. *Sturmia atropivora* is currently treated as a valid species of *Drino* Robineau-Desvoidy, 1863 (e.g. Herting & Dely-Draskovits, 1993; O'Hara et al., 2009). Acceptance of *S. atropivora* as the type species of *Sturmia* and *Senometopia* would result in the names *Sturmia*, *Senometopia* and *Drino* becoming subjective synonyms, with *Sturmia* having priority over the other two. The genus currently known as *Drino* would take the name *Sturmia* (with *Drino* in subjective synonymy). The genus currently known as *Sturmia* would take the name *Oodigaster* Macquart, 1854 (the next available genus-group name for an included species; the type species of *Oodigaster* was recently fixed as *Tachina bella* Meigen, 1824 by O'Hara et al. (2009) under Article 70.3.2 of the Code). The genus currently known as *Senometopia* would take the name *Stenometopia* Agassiz, 1846 (an unjustified emendation of *Senometopia* and the next available genus-group name).

10. Regional catalogues of Diptera record *Drino* (EXORISTINAE Robineau-Desvoidy, 1963, ERYCIINI Robineau-Desvoidy, 1830 [relative precedence of family-group names protected by Article 35.5 of the Code]; including subgenera *Zygobothria* Mik, 1891 and *Palexorista* Townsend, 1921, both commonly treated as separate genera prior to the 1990s) as a cosmopolitan genus with about 125 species; *Sturmia* (EXORISTINAE, GONIINI Robineau-Desvoidy, 1830; prior to the 1990s commonly classified in the STURMIINI Robineau-Desvoidy, 1863) is recorded as a widely distributed genus in the Old World with 11 species; and *Senometopia* (EXORISTINAE, ERYCIINI; prior to the 1990s commonly placed as a subgenus of *Carcelia* Robineau-Desvoidy, 1830) is also recorded as a widely distributed genus in the Old World with about 60 species (e.g. Crosskey, 1977, 1980; Cantrell & Crosskey, 1989; Herting & Dely-Draskovits, 1993; O'Hara & Wood, 2004; O'Hara et al., 2009; [Guimarães (1971) recorded *Sturmia* from the Neotropical Region in error]). Switching the name of the genus *Drino* to *Sturmia* would cause substantial confusion in the tachinid literature. Furthermore, the concept of the former STURMIINI would be changed. The name STURMIINI is currently regarded as a subjective synonym of GONIINI, but acceptance of Desmarest's type species designation for *Sturmia* would place it in subjective synonymy with ERYCIINI (the latter name having priority; Sabrosky, 1999, pp. 130, 293).

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Sturmia* Robineau-Desvoidy, 1830 before that of *Sturmia vanessae* Robineau-Desvoidy, 1830 by Robineau-Desvoidy (1863);
- (2) to use its plenary power to set aside all type species fixations for the nominal genus *Senometopia* Macquart, 1834 before that of *Carcelia aurifrons* Robineau-Desvoidy, 1830 by Townsend (1916);
- (3) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Sturmia* Robineau-Desvoidy, 1830 (gender: feminine), type species *Sturmia vanessae* Robineau-Desvoidy, 1830, as ruled in (1) above;
 - (b) *Senometopia* Macquart, 1834 (gender: feminine), type species *Carcelia aurifrons* Robineau-Desvoidy, 1830, as ruled in (2) above;
- (4) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *vanessae* Robineau-Desvoidy, 1830, as published in the binomen *Sturmia vanessae* (specific name of the type species of *Sturmia* Robineau-Desvoidy, 1830);
 - (b) *aurifrons* Robineau-Desvoidy, 1830, as published in the binomen *Carcelia aurifrons* (specific name of the type species of *Senometopia* Macquart, 1834).

References

- Agassiz, L. 1846. *Nomenclatoris zoologici index universalis, continens nomina systematica classium, ordinum, familiarum et generum animalium omnium, tam viventium quam fossilium, secundum ordinem alphabeticum unicum disposita, adjectis homonymiis plantarum, nec non variis adnotationibus et emendationibus*. [= Fasc. XII]. viii, 393 pp. Jent & Gassman, Soloduri [= Solothurn, Switzerland].
- Cantrell, B.K. & Crosskey, R.W. 1989. Family Tachinidae. Pp. 733–784. In Evenhuis, N.L. (Ed.), *Catalog of the Diptera of the Australasian and Oceanian Regions*. Bishop Museum Special Publication 86. 1155 pp. Bishop Museum Press, Honolulu & E.J. Brill, Leiden.

- Crosskey, R.W.** 1977. Family Tachinidae. Pp. 586–697. In Delfinado, M.D. & Hardy, D.E. (Eds.), *A Catalog of the Diptera of the Oriental Region*. Volume III. Suborder Cyclorhapha (excluding Division Aschiza). 854 pp. University Press of Hawaii, Honolulu.
- Crosskey, R.W.** 1980. Family Tachinidae. Pp. 822–882. In Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1437 pp. British Museum (Natural History), London.
- Evenhuis, N.L.** 2010. Type designations of Diptera (Insecta) in the *Encyclopaedia Metropolitana*. *Zootaxa*, **2653**: 37–50.
- Evenhuis, N.L., O'Hara, J.E., Pape, T. & Pont, A.C.** 2010. Nomenclatural studies toward a world list of Diptera genus-group names. Part I: André-Jean-Baptiste Robineau-Desvoidy. *Zootaxa*, **2373**: 1–265.
- Evenhuis, N.L. & Thompson, F.C.** 1990. Type designations of genus-group names of Diptera given in d'Orbigny's *Dictionnaire Universel d'Histoire Naturelle*. *Bishop Museum Occasional Papers*, **30**: 226–258.
- Guimarães, J.H.** 1971. Family Tachinidae (Larvaevoridae). *A catalogue of the Diptera of the Americas south of the United States*, **104**: 1–333.
- Herting, B. & Dely-Draskovits, Á.** 1993. Family Tachinidae. Pp. 118–458 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 13. Anthomyiidae – Tachinidae. 624 pp. Hungarian Natural History Museum, Budapest.
- Macquart, J.** 1834. *Insectes diptères du nord de la France. Tome V. Athéricères: créophiles, oestrides, myopaires, conopsaires, scénopiniens, céphalopsides*. 232 pp., 6 pls. L. Danel, Lille.
- Macquart, J.** 1854. Nouvelles observations sur les diptères d'Europe de la tribu des tachinaires. (Suite.) *Annales de la Société Entomologique de France*, (3)**2**: 373–446, pls. 13–15.
- Mik, J.** 1891. Dipterologische Miscellen. XIX. *Wiener Entomologische Zeitung*, **10**: 189–194.
- O'Hara, J.E., Shima, H. & Zhang, C.-t.** 2009. Annotated catalogue of the Tachinidae (Insecta: Diptera) of China. *Zootaxa*, **2190**: 1–236.
- O'Hara, J.E. & Wood, D.M.** 2004. Catalogue of the Tachinidae (Diptera) of America north of Mexico. *Memoirs on Entomology, International*, **18**: iv, 410 pp.
- Orbigny, C.V.D. d'.** (Ed.). 1848. [Livraison 134], pp. 65–128. *Dictionnaire universel d'histoire naturelle résumant et complétant...* Tome douzième. 816 pp. C. Renard, Paris.
- Richardson, C.** 1838. [Lexicon] in Smedley, E., Rose, H[ugh].J. & Rose, H[enry].J., (Eds.), *Encyclopaedia metropolitana; or, universal dictionary of knowledge, on an original plan: comprising the twofold advantage of a philosophical and an alphabetical arrangement, with appropriate engravings*. Volume XXIV. [Miscellaneous & lexicographical, Vol. 11]. 864 pp. B. Fellowes, F. & J. Rivington, Duncan & Malcolm, Suttaby & Co., E. Hodgson, J. Dowding, G. Lawford, J.M. Richardson, J. Bohn, T. Allman, J. Bain, S. Hodgson, F.C. Westley, L.A. Lewis, T. Hodges, H. Washbourne, London; J.H. Parker, T. Laycock, Oxford; J. & J.J. Deighton, Cambridge.
- Robineau-Desvoidy, J.B.** 1830. Essai sur les myodaires. *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France. Sciences Mathématiques et Physiques*, (2)**2**: 1–813.
- Robineau-Desvoidy, J.B.** 1863. *Histoire naturelle des diptères des environs de Paris*. Tome premier. xvi, 1143 pp. V. Masson et fils, Paris, F. Wagner, Leipzig, and Williams & Norgate, London.
- Sabrosky, C.W.** 1999. Family-group names in Diptera. An annotated catalog. *Myia*, **10**: 1–360.
- Townsend, C.H.T.** 1916. Designations of muscoid genotypes, with new genera and species. *Insecutor Inscitiae Menstruus*, **4**: 4–12.
- Townsend, C.H.T.** 1921. Some new muscoid genera ancient and recent. *Insecutor Inscitiae Menstruus*, **9**: 132–134.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3542***Trachelus* Jurine, 1807 (Hymenoptera, CEPHIDAE): proposed precedence over *Astatus* Panzer, [1801]**

Stephan M. Blank and Andreas Taeger

*Senckenberg Deutsches Entomologisches Institut, Eberswalder Str. 90,
15374 Müncheberg, Germany* (e-mail: Stephan.Blank@senckenberg.de;
Andreas.Taeger@senckenberg.de)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used genus name *Trachelus* Jurine, 1807 in its accustomed usage. The name *Trachelus* is threatened by its senior synonym *Astatus* Panzer, [1801]. Strict application of the Principle of Priority would also involve the recombination with a new genus name for the ‘black grain stem sawfly’, *Trachelus tabidus* (Fabricius, 1775), which is a pest of cereals in the southern West Palaearctic and in North America. It is proposed that *Trachelus* should be given precedence over *Astatus* whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Hymenoptera; CEPHIDAE; *Astatus*; *Trachelus*; sawfly; West Palaearctic; Nearctic.

1. Panzer ([1801a], Heft 83, p. 12) proposed the generic name *Astatus*, type species by monotypy *Sirex troglodyta* Fabricius, 1787 (pp. 258–259). We follow Sherborn (1923, p. 567) in dating Hefte 80–83 of Panzer, including the original description of *Astatus*, to the year 1801. Evenhuis (1997, p. 600) gave the possible period of publication as after June 1800 and before 17 June 1801. Rohwer (1911a, p. 74) designated *Sirex troglodyta* Fabricius, 1787 as the type species of *Astatus*, providing proper reference to Panzer’s ([1801a]) description but erroneously quoting Jurine as the author of *Astatus*. The citation of the wrong author was corrected by Rohwer (1911b, p. 218). Rohwer’s (1911a) subsequent designation of a type species is not valid, because Panzer ([1801a]) in Heft 83 (p. 12) included *A. troglodyta* as the only *Astatus* species, which is therefore type species by monotypy (Taeger & Blank, 2006, p. 327). Additional species were later associated with *Astatus* by Panzer ([1801b]) in Heft 85 published on 26 December 1801 (Evenhuis, 1997, p. 600).

2. Latreille (1797, pp. 114–115) proposed the generic name *Astatus* for a wasp with no species originally included. In the preface of his book, Latreille (1797, p. xiii) corrected the spelling of *Astatus* Latreille, 1797 to *Astata*, which represents the correction of an incorrect original spelling under the provisions of Article 32.5.1.1 and thus a justified emendation under the provisions of Article 33.2.2 of the Code. Latreille (1803, pp. 336–337) included as the first species *Tiphia abdominalis* Panzer, [1798] (Heft 53, p. 5), which became type species by subsequent designation (Opinion 139, p. 42, 20 December 1942). The name *Astata* is currently applied to a genus of SPHECIDAE (Pulawski, 2010). Several authors, for example Abe & Smith (1991), erroneously claimed *Astatus* Panzer, [1801] (CEPHIDAE) to be a junior homonym of

Astatus Latreille, 1797 (SPHECIDAE). Konow (1908) stated that such a homonymy does not exist due to the emendation included in Latreille's (1797, p. xiii) preface. The incorrect original spelling *Astatus* Latreille, 1797 accordingly has no influence on the present case.

3. [Jurine] in Panzer (1801c, p. 163) proposed the generic name *Astatus* and included 'Sirex pygmaeus. *Banchus spinipes* Panzer (*Banchus viridator* Fabric. inedit.)'. *Astatus* [Jurine], 1801 is unavailable, because it was included in the work commonly known as the 'Erlangen List', which has been suppressed under the plenary power for the purpose of nomenclature (Opinion 135, 13 June 1939; Direction 4, 12 June 1954).

4. Jurine (1807, pp. 70–72, plate 2, fig. 9) replaced the generic name *Astatus* [Jurine] in Panzer, 1801 by *Trachelus*. Of the six species included originally in *Trachelus*, Rohwer (1911a, p. 91) designated *Sirex tabidus* Fabricius, 1775 (p. 326) as the type species of *Trachelus*. It is evident from Jurine's (1807, p. 72) list of species that the genus was intended to include species associated with *Astatus* by Panzer ([1801a], [1801b]) and some of the species associated with *Astatus* by Klug (1803, pp. 47–56): 'Troglodita. Fabr. *Cephus*', a misspelling of the species-group name *troglodyta*, originally described as *Sirex troglodyta* Fabricius, 1787 (pp. 258–259), currently treated as a valid species of the genus *Trachelus* Jurine, 1807; 'Compressus.*Fabr. *Cephus*', originally described as *Sirex compressus* Fabricius, 1793 (p. 131), currently treated as a valid species of the genus *Janus* Stephens, 1829; 'Pygmaeus. Fabr. *Cephus*', a misspelling of the species-group name *pygmeus*, originally described as *Sirex pygmeus* Linnaeus, 1767 (pp. 929–930), currently treated as a valid species of the genus *Cephus* Latreille, 1803; 'Tabidus. Fabr. *Cephus*', originally described as *Sirex tabidus* Fabricius, 1775 (p. 326), currently treated as a valid species of the genus *Trachelus* Jurine, 1807; 'Satyrus. Panzer. *Astatus*', originally described as *Astatus satyrus* Panzer, [1801b] (p. 12), currently treated as a valid species of the genus *Hartigia* Schiødte, 1839; 'Haemorroidalis. Gravé', originally described as *Tenthredo haemorrhoidalis* Fabricius, 1781 (p. 417), currently treated as a valid species of the genus *Hartigia* Schiødte, 1839.

5. Billberg (1820, p. 98) described *Cepha*, type species by monotypy *Sirex tabidus* Fabricius, 1775 (p. 326). Owing to its similarity to the well-known genus-group name *Cephus* Latreille, 1803, Morice & Durrant (1915, p. 384) proposed the replacement name *Trachelastatus*. *Cepha* Billberg, 1820 and *Trachelastatus* Morice & Durrant, 1915 are junior objective synonyms of *Trachelus* Jurine, 1807 by virtue of having the same type species.

6. Erroneously supposing *Astatus* to have been described twice, by Latreille (1797) and Panzer ([1801]), Schulz (1906, p. 211) proposed the replacement name *Eumetabolus* for *Astatus* Panzer, [1801].

7. Benson (1935) subdivided the group within CEPHIDAE, which today is represented by the same genus *Trachelus*, into *Ateuchopus* Konow, 1896, *Microcephus* Benson, 1935, *Neateuchopus* Benson, 1935 and *Trachelus* Jurine, 1807, and listed 'Astatus Jurine auct., 1801, nec Latreille, 1796' as a synonym of *Trachelus*. In a subsequent work, Benson (1946) followed a wider concept of *Trachelus*, in which he grouped 'together into one genus [i.e. into *Trachelus*] the species previously included in *Trachelus* and *Eumetabolus*, largely on the similarity in the form of their female saw-sheaths and their male sternites' (p. 104). He listed as junior synonyms *Ateuchopus*,

Microcephus, *Neateuchopus*, and in addition *Eumetabolus* Schulz, 1906 and *Trachelastatus* Morice & Durrant, 1915. The name *Astatus* Panzer, [1801] was not considered by Benson (1946), but its synonymy with *Trachelus* has been implied by the synonymy of its replacement name *Eumetabolus*. Subsequent works have usually followed Benson's (1946) concept. *Trachelus* now comprises eight species native to the Palaearctic (Blank et al., 2009, Taeger et al., 2010). None of these works has discussed the priority of *Astatus* Panzer, [1801] over *Trachelus* Jurine, 1807 until Taeger & Blank (2006, p. 327) and Taeger et al. (2010, p. 53). Although without comment, Dusmet (1949) used the name *Astatus* in combination with '*niger* Harr.', which possibly corresponds with *Trachelus troglodyta* following Konow's misinterpretation of this name. Also without providing an explanation, Weiffenbach (1982) treated as valid genus names both *Astatus* for *A. flavicornis* (Lucas, 1849) (Lucas [1848]–1849, pp. 342–345, pl. 19) and *Trachelus* for *T. tabidus* and *T. 'troglodytes'*, a misspelling of *troglodyta*.

8. *Trachelus tabidus* (Fabricius, 1775), known as the 'black grain stem sawfly', is native to the southern part of the West Palaearctic region and it was inadvertently introduced into the Nearctic. Larvae of *Trachelus*, particularly of *T. tabidus*, and of *Cephus pygmeus* (Linnaeus, 1767) are common pests of cultivated grain crops such as durum and bread wheat, barley, and oats. They feed internally in the stalks causing reduced grain weight and losses at harvest due to stalk break. About 85 years ago *T. tabidus* and *C. pygmeus* achieved pest status in the United States (Gahan, 1920; Houser, 1935; Udine, 1941; Wallace & McNeal, 1966). In the West Palaearctic, *Trachelus* species have been the subject of various pest management publications (e.g. Gol'berg, 1986; Baniță et al., 1992; Miller et al., 1993). Between 1917 and 2004 at least 25 works were published in applied entomology including information on *T. tabidus* and related species of *Trachelus*. Among 203 works published in various fields of entomology between 1900 and 2010, which refer to *tabidus*, 192 treated this species in *Trachelus* and seven in the subgenus *Trachelus*. Taxonomic catalogues and major identification works published during the past 60 years have consistently used the name *Trachelus* as valid but not *Astatus* (e.g. Benson, 1951, 1968; Middlekauff, 1969; Verzhutskii, 1973; Smith, 1979; Muche, 1981; Abe & Smith, 1991; Goulet, 1992; Zhelochovtsev & Zinovjev, 1993; Stange, 1997; Taeger et al., 2010). Only the outdated North American Catalog of Ross (1951) still treated *tabidus* under *Cephus* (*Trachelus*). A list of 255 works published after 1946, which demonstrates the widely accustomed use of *Trachelus* for the genus and *T. tabidus* for the pest organism, has been forwarded to the Commission Secretariat. A Google search for the string '*Trachelus tabidus*' provided a total of 1,600 hits of various origins, while '*Astatus tabidus*' was found only 70 times, mostly referring to digitalised historical publications.

9. Strict application of the Principle of Priority would result in considerable nomenclatural confusion, because a pest organism, *Trachelus tabidus*, would receive a new generic name. Since the senior synonym *Astatus* Panzer, [1801] has been used several times after 1899 as a valid genus-group name until Benson's (1946) revision and rarely also later, the priority of the junior synonym *Trachelus* Jurine, 1807 cannot be reversed in accordance with the provisions of Article 23.9.1.1 of the Code. We propose that, to ensure nomenclatural stability, the Commission rule to give priority to *Trachelus* Jurine, 1807 over *Astatus* Panzer, [1801] in its accustomed usage

whenever the two generic names are considered to be synonyms. The case has to be referred to the Commission in accordance with the provisions of Article 23.9.3 of the Code.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the generic name *Trachelus* Jurine, 1807 precedence over the name *Astatus* Panzer, [1801], whenever the two are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Trachelus* Jurine, 1807 (genus: masculine), type species by subsequent designation by Rohwer (1911a) *Sirex tabidus* Fabricius, 1775, with the endorsement that it is to be given precedence over the name *Astatus* Panzer, [1801], whenever the two are considered to be synonyms;
 - (b) *Astatus* Panzer, [1801] (genus: masculine), type species by monotypy *Sirex troglodyta* Fabricius, 1787, with the endorsement that it is not to be given priority over the name *Trachelus* Jurine, 1807, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *tabidus* Fabricius, 1775, as published in the binomen *Sirex tabidus* (specific name of the type species of *Trachelus* Jurine, 1807);
 - (b) *troglodyta* Fabricius, 1787, as published in the binomen *Sirex troglodyta* (specific name of the type species of *Astatus* Panzer, [1801]).

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References

- Abe, M. & Smith, D.R. 1991. The genus-group names of Symphyta (Hymenoptera) and their type species. *Esakia*, **31**: 1–115.
- Baniță, E., Popov, C., Luca, E., Cojocaru, D., Paunescu, G. & Vilau, F. 1992. Elemente de combatere integrată a viespilor griului (*Cephus pygmaeus* Latr. și *Trachelus tabidus* L.). *Probleme de Protecția Plantelor*, **20**(3–4): 169–185.
- Benson, R.B. 1935. On the genera of Cephidae, and the erection of a new family Syntexidae (Hymenoptera, Symphyta). *Annals and Magazine of Natural History, including Zoology, Botany, and Geology*, 10th series, **16**: 535–553.
- Benson, R.B. 1946. Classification of the Cephidae (Hymenoptera Symphyta). *Transactions of the Royal Entomological Society of London*, **96**(6): 89–108.
- Benson, R.B. 1951. Hymenoptera, Symphyta. *Handbooks for the Identification of British Insects*, **6**(2a): 1–49.
- Benson, R.B. 1968. Hymenoptera from Turkey, Symphyta. *Bulletin of the British Museum (Natural History)*, *Entomology series*, **22**(4): 111–207.
- Blank, S.M., Taeger, A., Liston, A.D., Smith, D.R., Rasnitsyn, A.P., Shinohara, A., Heidema, M. & Viitasaari, M. 2009. Studies toward a World Catalog of Symphyta (Hymenoptera). *Zootaxa*, **2254**: 1–96.
- Billberg, G.J. 1820. *Enumeratio Insectorum in Museo Gust. Joh. Billberg*. 138 pp. Gadelianis, Stockholm.
- Dusmet, J.M. 1949. Revisión de los Tenthredínidos de España. *Publicaciones de la Real Academia de Ciencias Exactas, Físicas y Naturales (Centenario)*, **1**(10): 441–484.

- Evenhuis, N.L. 1997. *Litteratura taxonomica dipterorum (1758–1930)*. Volumes 1–2: vii, 871 pp. Backhuys Publishers, Leiden.
- Fabricius, J.C. 1775. *Systema Entomologiae sistens Insectorum classes, ordines, genera, species, adjectis synonymis, locis, descriptionibus, observationibus*. [30], 832 pp. Korte, Flensburgi & Lipsiae.
- Fabricius, J.C. 1781. *Species Insectorum exhibentes eorum differentias specificas, synonyma auctorum, loca natalia, metamorphosin adiectis observationibus, descriptionibus*, vol. 1. viii, 552 pp. C.E. Bohnii, Hamburgi & Kilonii.
- Fabricius, J.C. 1787. *Mantissa Insectorum, sistens eorum species nuper detectas : adjectis characteribus genericis, differentiis specificis, emendationibus, observationibus*, vol. 1. xx, 348 pp. Christ. Gottl. Proft., Hafniæ.
- Fabricius, J.C. 1793. *Entomologia Systematica*, vol. 2. Pp. 478–487. Hafniae.
- Gahan, A.B. 1920. Black grain-stem sawfly of Europe in the United States. *United States Department of Agriculture, Bulletin*, **834**: 1–18.
- Gol'berg, A.M. 1986. Biology of the stem sawflies *Trachelus tabidus* and *Cephus pygmaeus* in the Negev of southern Israel. *Entomologia Experimentalis et Applicata*, **40**(2): 117–121.
- Goulet, H. 1992. The genera and subgenera of the sawflies of Canada and Alaska: Hymenoptera: Symphyta. In *The insects and arachnids of Canada (Part 20)*. Agriculture Canada Publication, **1876**: 1–235.
- Houser, J.S. 1935. The black grain-stem sawfly, *Trachelus tabidus* (Fab.), in Ohio. *Journal of Economic Entomology*, **28**: 457–458.
- Jurine, L. 1807. *Nouvelle méthode de classer les Hyménoptères et les Diptères*, vol. 4(II). 319 pp., 7 pls., Genève & Paris.
- Klug, F. 1803. *Monographia Siricum Germaniae atque generum illis adnumeratorum*. xii + 64, [7] pp. F. Schüppel, Berolini.
- Konow, F.W. 1908. Litteratur. (Hym.). *Zeitschrift für systematische Hymenopterologie und Dipterologie*, **8**(1): 47–48.
- Latreille, P.A. 1797. *Précis des caractères génériques des Insectes, disposés dans un ordre naturel par le Citoyen Latreille*. An V. xiv, 201, [7] pp. Prévot, Paris & F. Bordeaux, Brive.
- Latreille, P.A. 1803. *Histoire naturelle, générale et particulière des Crustacés et des Insectes*, vol. 3[1802–1803](1–12). 467 pp. Dufart, Paris.
- Linnaeus, C. 1767. *Systema Naturae*, Ed. 12, vol. 1, part 2. Pp. 533–1327. Salvii, Holmiae.
- Lucas, P.H. [1848]–1849. *Exploration scientifique de l'Algérie pendant les Années 1840, 1841, 1842, publiée par Ordre du Gouvernement et avec le Concours d'une Commission Académique. Sciences physiques. Zoologie. III. Histoire naturelle des Animaux articulés. Troisième partie. Insectes*, vol. 3. Pp. 3, 3–527. Imprimerie Nationale, Paris.
- Middlekauff, W.W. 1969. The Cephid stem borers of California (Hymenoptera: Cephidae). *Bulletin of the California Insect Survey*, **11**: 1–18.
- Miller, R.H., El Masri, S. & Al Jundi, K. 1993. Plant density and wheat stem sawfly (Hymenoptera: Cephidae) resistance in Syrian wheats. *Bulletin of Entomological Research*, **83**: 95–102.
- Morice, F.D. & Durrant, J.H. 1915. The authorship and first publication of the Jurinean genera of Hymenoptera: Being a reprint of a long-lost work by Panzer, with a translation into English, an introduction, and bibliographical and critical notes. *Transactions of the Entomological Society of London*, [1914](3–4): 339–436.
- Muche, W.H. 1981. Die Cephidae der Erde (Hym., Cephidae). *Deutsche Entomologische Zeitschrift, Neue Folge*, **28**(4–5): 239–295.
- Panzer, G.W.F. [1798]. *Faunae Insectorum Germanicae initia oder Deutschlands Insecten*. Vol. 5[1798](53): 24 pp., 24 pls. Felssecker, Nürnberg.
- Panzer, G.W.F. [1801a]. *Faunae Insectorum Germanicae initia oder Deutschlands Insecten*. Vol. 7[1799–1801](83). 24 pp., 24 pls. Felssecker, Nürnberg.
- Panzer, G.W.F. [1801b]. *Faunae Insectorum Germanicae initia oder Deutschlands Insecten*. Vol. 8[1801–1804](85). 24 pp., 24 pls. Felssecker, Nürnberg.
- Panzer, G.W.F. 1801c. Nachricht von einem neuen entomologischen Werke, des Hrn. Prof. Jurine in Geneve. *Intelligenzblatt der Litteratur-Zeitung*, **1**: 160–165 [reprinted by Morice & Durrant, 1915, pp. 357–365].

- Pulawski, W.J.** 2010. *Astata*. 38 pp. In Pulawski, W.J., *Catalog of Sphecidae sensu lato (= Apoidea excluding Apidae)*. http://research.calacademy.org/files/Departments/ent/sphecidae/Genera_and_species_pdf/Astata.pdf, accessed on 18.10.2010.
- Rohwer, S.A.** 1911a. Technical papers on miscellaneous forest insects. II. The genotypes of the sawflies and woodwasps, or the superfamily Tenthredinoidea. *United States Department of Agriculture, Bureau of Entomology, Technical series*, **20**: 69–109.
- Rohwer, S.A.** 1911b. Additions and corrections to 'The genotypes of the sawflies and woodwasps, or the superfamily Tenthredinoidea' (Hymen.). *Entomological News and Proceedings of the Entomological Section of the Academy of Natural Sciences of Philadelphia*, **22**: 218–219.
- Ross, H.H.** 1951. Suborder Symphyta (= Chalastogastra) [except the Siricoidea, the Pamphiliidae, and the genus *Periclista*]. Pp. 4–89 in Muesebeck, C.F.W., Krombein, K.V. & Townes, H.K. (Eds.), *Hymenoptera of America North of Mexico. Synoptic Catalog*, vol. 2. 1420 pp. United States Department of Agriculture Agricultural Monograph, Washington DC.
- Schulz, W.A.** 1906. Strandgut. *Spolia Hymenopterologica*, [1906]: 76–269.
- Sherborn, C.D.** 1923. On the dates of G. W. F. Panzer's 'Fauna Insect. German.', 1792–1844. *Annals and Magazine of Natural History, including Zoology, Botany, and Geology*, 9th series, **11**(64): 566–567.
- Smith, D.R.** 1979. Suborder Symphyta. Pp. 3–137 in Krombein, K.V., Hurd, P.D., Jr., Smith, D.R. & Burks, B.D. (Eds.), *Catalog of Hymenoptera in America North of Mexico. Volume 1, Symphyta and Apocrita (Parasitica)*. xvi, 1198 pp. Smithsonian Institution Press, Washington DC.
- Stange, L.A.** 1997. The stem sawflies of Florida (Hymenoptera: Cephidae). *Entomology Circular*, **382**: 1–4.
- Taeger, A. & Blank, S.M.** 2006. Bibliographic notes. Pp. 319–330 in Blank, S.M., Schmidt, S. & Taeger, A. (Eds.), *Recent Sawfly Research: Synthesis and Prospects*. Goecke & Evers, Keltern.
- Taeger, A., Blank, S.M. & Liston, A.D.** 2010. World catalog of Symphyta (Hymenoptera). *Zootaxa*, **2580**: 1–1064.
- Udine, E.J.** 1941. The black grain stem sawfly and the European wheat stem sawfly in the United States. *United States Department of Agriculture, Circular*, **607**: 1–9.
- Verzhutskii, B.N.** 1973. *Opredelitel' lichinok rogokhvostov i pilil'shchikov Sibirii i Dal'nego Vostoka*. 140 pp. Nauka, Moskva.
- Wallace, L.E. & McNeal, F.H.** 1966. Stem sawflies of economic importance in grain crops in the United States. *United States Department of Agriculture, Technical Bulletin*, **1350**: 1–50.
- Weiffenbach, H.** 1982. Über die von W. Schacht, München, in den Jahren 1975–1980 in Südsanien gesammelten Blattwespen (Hymenoptera, Tenthredinoidea). *Nachrichtenblatt der Bayerischen Entomologen*, **31**(6): 107–112.
- Zhelochovtsev, A.N. & Zinovjev, A.G.** 1993. Hymenoptera Part VI Symphyta. In Medvedev, G.S. (Ed.), *Keys to the Insects of the European Part of the USSR*, vol. 3(6). 387 pp. Amerind Publ. Co. Pvt. Ltd., New Delhi.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on the proposed conservation of the specific name of *Callidea lateralis* Guérin-Méneville, 1838 (currently *Lamprocornis lateralis*; Insecta, Heteroptera) (Case 3523; see BZN 67: 213–217, 314)

Petr Kment

Department of Entomology, National Museum, Kunratice 1, CZ-148 00 Praha, Czech Republic (e-mail: sigara@post.cz)

Petr Baňář

Department of Entomology, Moravian Museum, Hviezdoslavova 29a, CZ-627 00 Brno – Slatina, Czech Republic (e-mail: petrbanar@seznam.cz)

We studied carefully the detailed argumentation of Tsai & Rédei (2010; *Zootaxa*, 2572: 25–47) concerning *Lamprocoris obtusus* (Westwood, 1837), a senior objective synonym of *Lamprocoris lateralis* (Guérin-Méneville, 1838). There is no doubt about the following facts emphasised by Rédei & Tsai (BZN 67: 213–217):

i) The senior name *L. obtusus* was greatly overlooked by subsequent authors and has never been positively treated as different from *L. lateralis*;

ii) There is extensive and substantial literature on this biological species under the junior name *L. lateralis*;

iii) This species is of economic importance, and is rather common in several parts of Southeast Asia, so it appears also in the agricultural literature and popular books on insects;

iv) Changing the name of this species simply because of adherence to the Principle of Priority is undesirable and would threaten stability of SCUTELLERIDAE nomenclature.

For these reasons, we strongly support the solution suggested by Rédei & Tsai (BZN 67: 213), i.e. to use the Commission's plenary power to suppress the specific name *Callidea obtusa* Westwood, 1837 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy, as is summarised in paragraph 9 of Case 3523.

Comment on the proposed conservation of usage of *Allosaurus* Marsh, 1877 (Dinosauria, Theropoda) by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877

(Case 3506; see BZN 67: 53–56; 178, 255–256, 332)

V. Demirjian

11 Canyon Terrace, Newport Coast, CA 92657 U.S.A. (e-mail: vahedemirjian@cox.net)

The taxonomy of the species referred to *Allosaurus* has been a contentious issue, as summarised by Paul (1988, 2010) and Chure (2000). Bakker (2000) and Paul (2010) claimed that *Allosaurus fragilis* (based on USNM 4734) is distinct from other specimens (DINO 2560, AMNH 666, etc.) by the proportions of its skull. However, Chure (2000) demonstrated that the supposed shortness of the skull of USNM 4734 was based on an erroneous reconstruction of the skull by Gilmore (1920).

Additional references

- Bakker, R.T.** 2000. Brontosaur killers: Late Jurassic allosaurids as sabre-tooth cat analogues. *Gaia*, **15**: 145–158.
- Paul, G.** 2010. *The Princeton Field Guide to Dinosaurs*. 320 pp. Princeton University Press.

Comment on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*; Reptilia, Testudines)

(Case 3463; see BZN **66**: 34–50, 80–87, 169–186, 274–290, 352–357; **67**: 71–90, 170–178, 246–254, 319–331)

Marinus S. Hoogmoed

Museu Paraense Emilio Goeldi/CZO, Caixa Postal 399, 66017–970 Belém, Pará, Brazil (e-mail: hoogmoed_apires@terra.com.br)

Since Case 3463 was submitted to ICZN comments on the name of the Aldabra tortoise have been many and varied. The most recent paper on the issue is by Frazier & Matyot (2010), who extensively comment on the identity of the lectotype of *Testudo dussumieri* Gray, 1831 (RMNH 3231). As former curator of the herpetological collection of the Natural History museum in Leiden, the Netherlands (RMNH), I was rather amazed to see this article, knowing that neither one of the authors ever has seen the specimen discussed, neither during my tenure in the RMNH (1966–2004) nor between 2004 and the publication of their mentioned article. It therefore seems necessary to add some more comments to the already (too) extensive literature of this case.

Identification

Frazier & Matyot (2010) present arguments against the credibility of the data that accompany the lectotype of *T. dussumieri*. They make statements that contradict all we know about the specimen and its history, and even reach the conclusion that ‘it is possible that the last survivors of an endemic species of tortoise were on Mahé at the time of Dussumier’s visits to Seychelles possibly starting as early as 1823, and therefore that his specimen that is now in Leiden [RMNH 3231] is not an Aldabra tortoise but rather a Seychelles tortoise’ (Frazier & Matyot, 2010, p. 41). Note that this conclusion was based on assumptions only and that the authors never studied the specimen. Frazier & Matyot (2010) did not use the photographs of the specimen (RMNH 3231) available in the literature (Gerlach, 2004a; Bour, 2006; Grünewald, 2009) to provide evidence for their remarkable statement about the identity of RMNH 3231, although they were well aware of the existence of these photos (Frazier, 2006b; Frazier & Matyot, 2010). Up until now, RMNH 3231 has been studied probably by six professional herpetologists only: Hermann Schlegel, J.E. Gray, A.A.W. Hubrecht, Roger Bour, Peter C.H. Pritchard, and myself, and more recently by F. Grünewald (2009; BZN **67**: 177), a Dutch tortoise hobbyist. Only the last four of these persons are alive and have participated in the debate on Case 3463. These seven persons independently reached the conclusion that RMNH 3231, based on external morphological characters, was an Aldabra tortoise, *Dipsochelys dussumieri*. Austin et al. (2003) used mtDNA of old type specimens of non-Madagascan *Aldabrachelys* (including the lectotype of *Testudo dussumieri*) to determine their

identity. A piece of alcohol-preserved tissue from the groin was taken by me from RMNH 3231 in 2000 and provided to E.N. Arnold for analysis. This tissue provided a 336 base pair (bp) partial sequence (Austin et al., 2003). There was minimal variation among the sequences studied, although RMNH 3231 (haplotype B) diverged by two nucleotide substitutions (a negligible 0.46% divergence) from the most common haplotype A. Austin et al. (2003) concluded ‘The individuals within the studied sample that differ from the common haplotype by 1–4 bp (0.23–0.9% divergence), including the type of *A. dussumieri*, would also be referable to the same single species, for even closely related tortoise species that are widely accepted show much greater differentiation (see above)’, and ‘On the basis of its uniformity compared with other tortoises, the mtDNA of non-Madagascan *Aldabrachelys* studied here suggests that only a single species may be involved’. Thus an independent method reached the same conclusion as the seven persons mentioned before. This conclusion of Austin et al. (2003) was wholeheartedly subscribed to by Frazier (2006b, 370) in his book review of Gerlach (2004). However, Frazier & Matyot (2010) now cite and interpret the Austin et al. (2003) data differently from Frazier (2006b) in order to ‘support’ their aberrant opinion on the identity of RMNH 3231 (see below).

The statement by Frazier & Matyot (2010, p. 42) ‘... considering the very limited information that has been published about RMNH 3231, it has simply been *assumed* that the specimen is an Aldabra tortoise ...’ is an assumption on the part of these authors that is only based on their prejudiced supposition that RMNH 3231 cannot be an Aldabra tortoise. But without studying the specimen themselves they cannot provide any hard evidence against the independent identifications of RMNH 3231 made so far by competent herpetologists.

It may be noted here that Matyot (BZN 66: 352) was mixing up two specimens when he said that the specimen described by Duméril & Bibron (1835) was the same one as that given to Leiden. First, the Leiden specimen (RMNH 3231) was already in Leiden when Duméril & Bibron (1835) published that description (Gray, 1831b). Secondly, the fact that the specimen described by Duméril & Bibron (1835) is still in Paris under number NMNH 1942 (Frazier & Matyot, 2010), invalidates Matyot’s (BZN 66: 352) observations on this subject.

Name and locality

Hoogmoed et al. (2010) published an account of the type specimens of turtles, tortoises and crocodiles in the Leiden Museum. They provided data on the origin and the locality of RMNH 3231, which are contested by Frazier & Matyot (2010).

Gray (1831a, p. 3) mentioned *Test. Dussumieri*, Schegel [sic]. Hoogmoed et al. (2010) have pointed out that although Gray (1831 a, b) attributed the name *Testudo Dussumieri* to Schlegel, this was not correct. The specimen was received from Paris with that name ‘attached’ to it. This was repeated by Frazier & Matyot (2010), who gave an extensive overview of the early history of this name. Gray (1831b) visited European museums somewhere before 1831, because the preface to his Synopsis Reptilium is dated January 1831. In his preface Gray (1831b) explains the rules under which he was allowed to see material: ‘In each of these museums all the specimens were intrusted to me, to describe, draw, or examine them, as might best suit my purpose, without any restraint, except that, at Leyden, Herr Temminck requested I

would indicate in what Museum I had seen it, and the name under which it was there described, a rule which I hope I have most faithfully kept.'

A young specimen of *Testudo dussumieri* was present in Leiden during Gray's visit there, as we can see from the text on p. 9 (Gray, 1831b), where in the synonymy of *Testudo indica* he gives a short description of *Testudo dussumieri*: 'Junior. Testa nigra margine laterali angulato, areolis magnis. Test. Dussumieri, Schlegel MSS. (v. Mus. Leyd.) – Pet. Gaz. t. 76, f. 4.' and also mentions the distribution (and collectors) of the species as 'Habitat in India Orientali, Gefi. Hardwicke, Insula Mauritiana, Insula Aldebra, M. Dussumiere, Galapagos, D. Harlan, Seychelles, (v. v. Hort. Zool., et t. Mus. Brit., Col. Chir., Par., et D. Bell.)'. Gray (1831b) made his reference to Schlegel ['MSS (v. Mus. Leyde)'] at the request of Temminck (see above). MSS is not further explained, but probably stands for manuscript or manuscripts, but we can not be certain of that, it may also have meant a name on a label, on a bottle, on a shelf, or even an oral communication (most likely by H. Schlegel). The 'v' in front of Mus. Leyde undoubtedly stands for 'vide' (= seen [by Gray]). Thus, on one page, we have all essential information (apart from the fact that it belonged to the Leiden collection) about *Testudo dussumieri* together: name, collector and locality. However, unfortunately Gray (1831b) presents his data in such a way that the three can not unambiguously be connected, although circumstantial evidence is strong. It seems important here to highlight another part of Gray's (1831b) preface in which he states: '..... the Royal Museum of Leyden and the Museum of the Senckenbergers Society of Francfort having been formed within these few years, the greater part of the specimens are quite fresh and in the most perfect condition, and their history is generally known and accurately marked upon them.' From this text it is clear that Gray (1831b) had full confidence in the data that accompanied the specimens he saw in Leiden.

Fortunately, concerning *Testudo dussumieri* there is a solid, printed statement that ties specimen, collector and locality together. Hoogmoed et al. (2010) mentioned that Temminck & Schlegel (1834) made a clear statement about the provenance of RMNH 3231: it was received from the Paris museum under the name *Test. Dussumieri* and was brought from the island of Aldebra by Dussumier. This statement in French is cited in full and translated by Bour (2006) and copied again by Frazier & Matyot (2010, p. 33). However, after having copied the clear statement, which does not leave any room for speculation, Frazier & Matyot (2010) start questioning its validity on the basis of confused arguments. Hubrecht (1881) also discussed RMNH 3231 and stated that 'The locality from whence the specimen was brought is sharply fixed. Dussumier himself on his travels in the tropics collected it in the island of Aldabra (N.W. of Madagascar) ...'. This citation in Frazier & Matyot (2010, p. 36) again is followed by the comment that Hubrecht did not explain how he determined the locality of his specimen was 'sharply fixed'.

The answer to all queries of Frazier & Matyot (2010) is very simple and unambiguous: Temminck & Schlegel (1834) made the published, printed statement about name, collector, locality and specimen on the basis of documentation (in whichever form) they had received from Paris with the specimen concerned. Hubrecht (1881) did the same, basing himself on the register and data on the label fixed to the bottle in which RMNH 3231 was (and still is) kept. In the RMNH it always has been good practice to trust the data provided with material, until the

contrary is proven. In this case there was no reason for any doubt, and Gray (1831b) was of the same opinion. Apparently Frazier & Matyot (2010) are unable, or rather unwilling, to accept obvious facts and lose themselves in a maze of suppositions and speculations about a locality that never has been doubted.

Frazier & Matyot (2010) cited Austin et al. (2003) to discredit the locality from whence RMNH 3231 came. They erroneously attributed all statements about *T. dussumieri* in this paper to Bour, who was one of the three co-authors and should not be singled out as being responsible for those data; statements in the paper are the shared responsibility of all three co-authors. Frazier & Matyot (2010) did not cite the reference correctly. They cite Austin et al. (2003) incompletely, and checking that paper carefully gives a completely different picture from the one Frazier & Matyot (2010) try to give. Frazier & Matyot (2010, p. 40) suggest that Austin et al. (2003) doubted the type locality of *T. dussumieri*, because in Table 2 the type locality is indicated with a question-mark. However, in Table 1 and on p. 1419 Austin et al. (2003) list the locality correctly as resp. 'Insula Aldebra' and 'Aldabra'. The question-mark in Table 2 under locality for *T. dussumieri* probably was a mistaken repeat of the one on the line above concerning *T. daudini*. This most likely was due to carelessness in reading the proofs of this article which has several typos that could and should easily have been avoided, e.g. in Table 1 RMNH 3231 is referred to as RMNH 32311, in Figure 2 RMNH 3231 is listed as NMNH 3231, the legend of Table 2 refers to "enBank" instead of GenBank, etc. Thus, there is no reason to accept Frazier & Matyot's (2010) reasoning about Austin et al. (2003) supposedly doubting RMNH 3231's locality.

Frazier & Matyot (2010, p. 38) incorrectly conclude that Hoogmoed et al. (2010) contradict themselves when talking about the type locality of RMNH 3231. What Hoogmoed et al. (2010) in effect were saying, is somewhat different from what Frazier & Matyot (2010) suggest. Hoogmoed et al. (2010) stated clearly that the type locality of RMNH 3231 is Aldabra and nowhere do they doubt this; they only cite two papers that say that even had Dussumier not visited Aldabra he could easily have obtained material from there (Bour et al., 2010; Cheke, BZN 67: 79). Hoogmoed et al. (2010) do not make any statements about whether Dussumier picked the specimen up himself on Aldabra or not, they just show that there is no reason to doubt the locality, because that has been associated with RMNH 3231 from the beginning. And stating (Frazier & Matyot, 2010) that Hoogmoed et al. (2010) had '... accepted Matyot's conclusion that Dussumier did not collect on Aldabra' is stretching the truth a bit too far, to put it mildly. The statements by Frazier & Matyot (2010) on p. 40 '... but it does not remove the uncertainty about the origin of the specimen [RMNH 3231]', on p. 41 that 'If – as all evidence [which evidence do they mean?] indicates – the place of origin of RMNH 3231 is Mahé, or even some other island in the granitic Seychelles, and not Aldabra Atoll ...' and on p. 42 (referring to MNHN 1942 and RMNH 3231) '... when in fact the locality data for both of these specimens are known to be uncertain ...' all can be considered wishful thinking, rather than the result of accumulated scientific evidence. As shown here, none of the arguments of Frazier & Matyot (2010) that RMNH 3231 is not from Aldabra, hold up against the known facts, and the origin of RMNH 3231 undoubtedly remains Aldabra as was accepted from the beginning (Gray, 1831b; Temminck & Schlegel, 1834; Hubrecht, 1881; Gerlach, 2004; Grünwald, 2009; Hoogmoed (BZN 66: 354); Hoogmoed et al., 2010).

Labels

As to the labels and other paper concerning RMNH 3231 there have been some unfortunate statements and mistakes in transcribing handwritten texts. Grünewald (2009, p. 139, upper figure) showed an old label on the outside of the jar in which RMNH 3231 is kept and gave as a legend ‘Het oorspronkelijke label van RMNH 3231, geschreven door John Edward Gray zelf’ [The original label of RMNH 3231, written by John Edward Gray himself]. This statement led Frazier & Matyot (2010) to several wrong conclusions, even after Grünewald explained to them that his text should have included ‘possibly’. There is no reason at all for such a statement, because the RMNH never let (foreign) visitors write labels that were attached to bottles etc. The collection of the RMNH was established in 1820. About the early history of its management we know little and it even is not quite certain when the present numbering system for reptiles and amphibians jointly was started, although there are some clues to that. During my tenure at RMNH I did some investigation into the matter that resulted in a notice I made in the register that was published by Böhme & Koch (2010, p. 62) in translation: ‘numbers up to ca. RMNH 3760 are classified systematically, higher numbers irregular. Up to that [number] it concerns animals received up to ca. 1866. From RMNH 3760 [on] irregular with older specimens (1837) and newer (1872, 1877) [intermixed]. I think that from the end of the 1860’s, beginning 1870’s (RMNH 3881 and further) it seems that specimens were classified on receiving date’. Holthuis (1995) mentioned that A.A.W. Hubrecht, who became curator of Vertebrates, especially fishes, on June 1, 1875 (and left the RMNH in 1882) catalogued the alcohol-collection of fishes and that of reptiles and amphibians (3759 lots). It is not clear from where Holthuis (1995) obtained these data, but the number of lots agrees with the last catalogue number of the systematically arranged reptile and amphibian alcohol material mentioned by me in the remark in the RMNH register above. However, the dates of Hubrecht’s stay at the RMNH do not seem to agree with the arrangement of material in the register. Material received up to 1866 is all arranged systematically, between RMNH 3760 and RMNH 3880 there is a mix of older and more recent specimens, and from RMNH 3881 on material is listed according to arrival date. It therefore seems likely that the registering was done by William Marshall, who was assistant for Vertebrates at the RMNH between 1868 and 1872, and whose active period at RMNH better coincides with the arrangement of material in the register than that of Hubrecht. Another possibility of course remains that Hubrecht indeed started the cataloguing (as Holthuis, 1995 stated), in about 1875–1877, but that would mean that in the period between 1866 and 1877 new material was not inserted in the collection at its proper systematic place and this seems unlikely. I therefore assume Marshall was the one that started the present day catalogue and numbering system of the collection of reptiles and amphibians of the RMNH. *Testudo dussumieri* is registered in the middle of a bunch of other species of *Testudo* in the first part of the RMNH register, where specimens are arranged systematically. This shows the specimen was present by about 1870 when the numbering system started. The text in the handwritten register is clear and unambiguous and reads as follows: ‘*Testudo elephantina* juv. *Test. indica* Ile Aldabra (pres de Madagascar)’, and written above ‘(pres de Madagascar)’ is the name Dussumier. There are no alterations or deletions in the text, only *elephantina* is underlined, the meaning of which is not clear. This same information can be found

written on the old label on the outside of the jar in which RMNH 3231 is kept, in the same hand, with the exception of the name of Dussumier. This could mean that the label was written at the same time (late 1860's, early 1870's) as the register. Apart from the original text on the label there is some more information (probably from a later date) written on the label in a coarse hand in bold pencil (not in Indian ink as supposed by Frazier & Matyot, 2010, p. 38): near the top middle and right hand: 'nigrita D & B.' and in the lower left corner, a bit above the bottom, in about the place where RMNH labels generally show the collector, 'Dussumier' (Grünewald, 2009). Thus, there is a good chance that the old label on the bottle of RMNH 3231 is not the 'original' label as stated by Hoogmoed et al. (2010), and that it possibly stems from after 1835 as suggested by Frazier & Matyot (2010). Anyway, it is a nearly true copy of the data in the first RMNH register and of the data provided by Temminck & Schlegel (1834). The only questionable matter that remains is why the name *Test. dussumieri*, mentioned by Temminck & Schlegel (1834) and Gray (1831 b) does not appear in the register or on the label. Thus, most likely the old label that is nowadays on the outside of the bottle of RMNH 3231 was not seen by Gray, so he must have based himself on other information.

Conclusion

Based on the arguments presented above I come to the conclusion that none of the allegations presented by Frazier & Matyot (2010) about the identity and the validity of the locality from which RMNH 3231 came can be substantiated by any hard evidence and therefore should be regarded as void. These allegations should not be taken into account in the discussion on Case 3463, trying to get accepted the unnecessary designation of a neotype for *Testudo gigantea* Schweigger, 1812.

Additional references

- Böhme, W. & Koch, A. 2010. On the type selection and re-typification of two monitor lizard taxa (Squamata: Varanidae): *Monitor bivittatus celebensis* Schlegel, 1844 and *Monitor kordensis* Meyer, 1874; with some comments and corrections on other name-bearing type specimens. *Zootaxa*, **2440**: 60–68.
- Frazier J. & Matyot, P. 2010. On the identity of Monsieur Dussumier's Dutch tortoise and the lectotype of *Testudo dussumieri* Gray, 1831. *Zootaxa*, **2665**: 29–50.
- Grünewald, F. 2009. Museumcollecties. RMNH 3231 (*Dipsochelys dussumieri*) Gray, 1831. *Trionyx*, **7**: 136–142.
- Holthuis, L.B. 1995. 1820–1958 *Rijksmuseum van Natuurlijke Historie*. 172 pp. Nationaal Natuurhistorisch Museum, Leiden.
- Hoogmoed, M.S., Gassó Miracle, M.E. & van den Hoek Ostende L.W. 2010. Type specimens of recent and fossil Testudines and Crocodylia in the collections of the Netherlands Centre for Biodiversity Naturalis, Leiden, the Netherlands. *Zoologische Mededelingen, Leiden*, **84**(8): 159–199.
- Temminck, C.J. & Schlegel, H. 1834. Reptilia. In von Siebold, P.F., *Fauna Japonica sive Descriptio animalium, quae in itinere per Japonianum, jussu et auspiciis superiorum, qui summum in India Batava Imperium tenent, suscepto, annis 1823–1830 colleget, notis observationibus et adumbrationibus illustratis*, vol. III. xxii, 144 pp., 27 pls. J.G. Lalau, Leiden.

No further comments on Case 3463 will be accepted for publication after 1 May 2011 unless they contain substantial new evidence that is likely to affect the vote.

Comment on the proposed conservation of usage of genus *Rhynchotherium* Falconer, 1868 (Mammalia; Proboscidea) by designation of *Rhynchotherium falconeri* Osborn, 1923 as the type species

(Case 3515; see BZN 67: 158–162, 256–257)

Maria Teresa Alberdi

Departamento de Paleobiología, Museo Nacional de Ciencias Naturales, CSIC, José Gutiérrez Abascal, 2, 28006 Madrid, Spain (e-mail: malberdi@mncn.csic.es)

Eduardo Corona-M.

Centro INAH Morelos, Instituto Nacional de Antropología e Historia, Matamoros 14, Acapatzingo, Cuernavaca, Morelos C.P. 62440, Mexico (e-mail: ecoroma09@gmail.com)

Joaquín Arroyo-Cabrales

Laboratorio de Arqueozoología “M. en C. Ticul Álvarez Solórzano”, Subdirección de Laboratorios y Apoyo Académico, INAH, Moneda # 16, Col. Centro, 06060 Mexico, D.F., Mexico (e-mail: arromatu5@yahoo.com.mx)

José Luis Prado

INCUAPA, Departamento de Arqueología, Universidad Nacional del Centro, Del Valle 5737, B7400JWI Olavarría, Argentina (e-mail: jprado@soc.unicen.edu.ar)

After a review of the opinion raised by Lucas (BZN 67: 158) and the comments by Morgan (BZN 67: 256), we strongly support the proposal for the conservation of the name *Rhynchotherium*, since the morphological characters are distinctive in the New World gomphotheres of the Pliocene epoch, e.g. a relatively short mandible, broad and with a symphysis obliquely depressed downwards and two lower tusks laterally compressed or deeply oval, often bearing external enamel bands.

The assignation of a holotype was confused from the original designation by Falconer (1868), since he used the cast of *R. tlascae* for naming a new taxon [Tobien (1973, p. 237) indicated that this cast pertained to an individual from the genus *Gomphotherium*, not to *Rhynchotherium*]. This error was seen by Osborn (1936) and he tried to correct it by suggesting *R. browni* as a neotype (see Osborn, 1936 fig. 452), however this proposal was discarded and all the specimens retained in the genus *Rhynchotherium*, since the most important diagnostic characters were those mentioned above for the mandible and the tusks, which enabled a reliable identification as it could be seen in recent discoveries of this taxon; e.g. Mexico (Alberdi & Corona, 2005; Corona & Alberdi, 2006).

We have authored several taxonomic papers in which we discussed the specific and generic statuses within GOMPHOTHERIIDAE and its taxonomy (Alberdi et al., 2002, 2004, 2007b, 2008, 2009; Corona & Alberdi, 2006; Prado et al., 2002, 2005). We have also authored two papers about phylogeny and biogeography of trilophodont gomphotheres in which the genus *Rhynchotherium* is included (Alberdi et al., 2007a; Prado & Alberdi, 2008). In those two last papers we rejected the hypothesis that *Rhynchotherium* was a direct ancestor of South American gomphotheres, and supported the hypothesis that *Sinomastodon* is their sister group.

For the proposal to conserve the genus name and for the taxonomic stability of the group, a new type species is warranted, and certainly we do agree that in the first instance it could be *R. falconeri*. However, this would not rule out further studies of the group in order to determine a type species that better represents the main features of this taxon.

Additional references

- Alberdi, M.T., Cerdeño, E. & Prado, J.L. 2008. *Stegomastodon platensis* (Proboscidea, Gomphotheriidae) en el Pleistoceno de Santiago del Estero, Argentina. *Ameghiniana*, **45**(2): 257–271.
- Alberdi, M.T. & Corona, E.M. 2005. Revisión de los gonfoterios en el Cenozoico tardío de México. *Revista Mexicana de Ciencias Geológicas*, **22**(2): 246–260.
- Alberdi, M.T., Juárez-Woo, J., Polaco, O.J. & Arroyo-Cabrales, J. 2009. Description of the most complete skeleton of *Stegomastodon* (Mammalia, Gomphotheriidae) recorded for the Mexican Late Pleistocene. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **251**: 239–255.
- Alberdi, M.T., Prado, J.L. & Cartelle, C. 2002. El registro de *Stegomastodon* (Mammalia, Gomphotheriidae) en el Pleistoceno superior de Brasil. *Revista Española de Paleontología*, **17**(2): 217–235.
- Alberdi, M.T., Prado, J.L., Ortiz-Jaureguizar, E., Posadas, P. & Donato, M. 2007a. Historical Biogeography of trilophodont gomphotheres (Mammalia, Proboscidea) reconstructed applying Dispersion-Vicariance analysis. *4th European Meeting on the Palaeontology and Stratigraphy of Latin America. Cuadernos del Museo Geominero IGME*, **8**: 9–14.
- Alberdi, M.T., Prado, J.L., Perea, D. & Ubilla, M. 2007b. *Stegomastodon waringi* (Mammalia, Proboscidea) from the Late Pleistocene of northeastern Uruguay. *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*, **243**(2): 179–189.
- Alberdi, M.T., Prado, J.L. & Salas, R. 2004. The Pleistocene Gomphotheriidae (Proboscidea) from Peru. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **231**(3): 423–452.
- Prado, J.L. & Alberdi, M.T. 2008. A Cladistic Analysis among Trilophodont Gomphotheres (Mammalia, Proboscidea). With Special Attention to the South American Genera. *Palaeontology*, **51**(4): 903–915.
- Prado, J.L., Alberdi, M.T., Azanza, B., Sánchez, B. & Frassinetti, D. 2005. The Pleistocene Gomphotheriidae (Proboscidea) from South America. *Quaternary International*, **126–128**: 21–30.
- Prado, J.L., Alberdi, M.T. & Gómez, G.N. 2002. Late Pleistocene gomphotheres (Proboscidea) from the Arroyo Tapalqué locality (Buenos Aires, Argentina) and their taxonomic and biogeographic implication. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **225**(2): 275–296.

Comment on the proposed conservation of usage of *Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia, Proboscidea) by designation of a neotype

(Case 3480; see BZN 66: 164–167, 358–359; 67: 96, 181–182, 333)

Maria Teresa Alberdi

Departamento de Paleobiología, Museo Nacional de Ciencias Naturales, CSIC, José Gutiérrez Abascal, 2, 28006 Madrid, Spain (e-mail: malberdi@mncn.csic.es)

Joaquín Arroyo-Cabrales

Laboratorio de Arqueozoología “M. en C. Ticul Álvarez Solórzano”, Subdirección de Laboratorios y Apoyo Académico, INAH, Moneda # 16, Col. Centro, 06060 Mexico, D.F., Mexico (e-mail: arromatu5@yahoo.com.mx)

Eduardo Corona-M.

Centro INAH Morelos, Instituto Nacional de Antropología e Historia, Matamoros 14, Acapatzingo, Cuernavaca, Morelos C.P. 62440, Mexico (e-mail: ecoroma09@gmail.com)

José Luis Prado

INCUAPA, Departamento de Arqueología, Universidad Nacional del Centro, Del Valle 5737, B7400JWI Olavarría, Argentina (e-mail: jprado@soc.unicen.edu.ar)

Óscar J. Polaco† (deceased)

Laboratorio de Arqueozoología “M. en C. Ticul Álvarez Solórzano”, Subdirección de Laboratorios y Apoyo Académico, INAH, Moneda # 16, Col. Centro, 06060 Mexico, D.F., Mexico

We certainly recognise the problem suggested by Lucas (BZN 67: 181) in regard to the name differences between the South American gomphotheres. However, before dealing with the question as to whether or not a neotype for *Mastodon waringi* should be proposed, we consider that a decision in regard to the validity or otherwise of the genus name *Haplomastodon* should be made. In that regard, the following statements should be considered during the discussion of Lucas's proposal:

(1) Supporting the use of the name *Haplomastodon* Hoffstetter, 1950, characterised by the absence of foramina transversa in the atlas. This name was proposed as a subgenus of *Stegomastodon* with type species *Mastodon chimborazi* Proaño, 1922.

The diagnostic characters of the subgenus *Haplomastodon* indicated by Hoffstetter (1950, 1952) are not significant, because they are the same as those of the genus *Stegomastodon*, and some of them (i.e. open foramina) are quite variable, as pointed out by Simpson & Paula Couto (1957). These authors also looked in detail for the differences between *Stegosmastodon* and *Haplomastodon*, finding that there were really very few and concluding that the latter genus would be a morphological intermediate between *Cuvieronius* and *Stegomastodon*; the same conclusion was stated by the authors in their Summary (p. 185), i.e. *Haplomastodon* is believed to be about as closely related to *Cuvieronius* as to *Stegomastodon*.

Prado et al. (2005), in agreement with Simpson & Paula Couto (1957), considered that the genus *Haplomastodon* could not be clearly differentiated from *Stegomastodon*. The character of the foramina transversa in the atlas and axis vertebrae is variable in the specimens from the Araxá locality, that is, it could be either present or absent (Simpson & Paula Couto, 1957:167–168). The distinguishing characters between these genera vary greatly in respect to the animal's age and are, therefore, not very good; both genera are very similar in the skull shape – elephantoid type, adult tusks usually straight or slightly curved at the tip and the mesial part of the maxilla with hemimaxilla straight and in contact (not divergent as in *Cuvieronius*).

Alberdi & Prado in their studies of gomphotheres from several localities of South America (Alberdi et al., 2002, 2004, 2007, 2008, 2009; Alberdi & Corona, 2005; Prado et al., 2002, 2005; Prado & Alberdi, 2008) found specimens either with or without foramina transversa in the atlas within the same species. They also observed that the only differences between the two genera (*Haplomastodon* and *Stegomastodon*) are found in the morphology of premolar and molar occlusal surfaces, where patterns (trefoils) are more complicated, or there are more accentuated plications (pticostilia) in *Stegomastodon* than in *Haplomastodon*, and also there are certain angulations on the loph(id)s more accentuated in *Stegomastodon* than in *Haplomastodon*, the last with more single trefoils (posttrites and prettrites) less developed than in *Stegomastodon* where they are more complicated. The differential characters of both genera are not enough to separate those taxa at the genus level, but only as subgenera.

Consequently, Prado et al. (2005) synonymised *Haplomastodon* with *Stegomastodon*, including two species: *S. waringi* and *S. platensis*.

(2) The proposal of *Mastodon waringi* as the neotype for the genus *Haplomastodon* by Lucas (BZN 66: 164) and supported by Pasenko (BZN 67: 96) should be overruled since the main problem would be confirming whether or not *Haplomastodon* is a junior synonym of *Stegomastodon* as we assessed. Furthermore, Ferretti's (BZN 66: 358) proposal for designating *Mastodon chimborazi* as a neotype should be also questioned on the same grounds as those mentioned above, unless a decision is taken with regard to changing the generic status of *Haplomastodon*.

Additional references

- Alberdi, M.T., Cerdeño, E. & Prado, J.L. 2008. *Stegomastodon platensis* (Proboscidea, Gomphotheriidae) en el Pleistoceno de Santiago del Estero, Argentina. *Ameghiniana*, **45**(2): 257–271.
- Alberdi, M.T. & Corona, E.M. 2005. Revisión de los gonfoterios en el Cenozoico tardío de México. *Revista Mexicana de Ciencias Geológicas*, **22**(2): 246–260.
- Alberdi, M.T., Juárez-Woo, J., Polaco, O.J. & Arroyo-Cabral, J. 2009. Description of the most complete skeleton of *Stegomastodon* (Mammalia, Gomphotheriidae) recorded for the Mexican Late Pleistocene. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **251**: 239–255.
- Alberdi, M.T., Prado, J.L., Perea, D. & Ubilla, M. 2007. *Stegomastodon waringi* (Mammalia, Proboscidea) from the Late Pleistocene of northeastern Uruguay. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **243**(2): 179–189.
- Hoffstetter, R. 1952. Les mammifères Pléistocènes de la République de L'Équateur. *Mémoires de la Société Géologique de France, Nouvelle Série*, **31**: 1–391.
- Prado, J.L. & Alberdi, M.T. 2008. A Cladistic Analysis among Trilophodont Gomphotheres (Mammalia, Proboscidea). With Special Attention to the South American Genera. *Palaeontology*, **51**(4): 903–915.

OPINION 2266 (Case 3494)***Atlanta inflata* Gray, 1850 (Mollusca, Gastropoda, PTEROTRACHEOIDEA, ATLANTIDAE): specific name conserved**

Abstract. The Commission has ruled that the specific name of the heteropod *Atlanta inflata* Gray, 1850 (ATLANTIDAE), originally published as a primary homonym of the pteropod *Atlanta inflata* d'Orbigny, 1836 (usually cited as *Limacina inflata*, currently *Heliconoides inflata*) (LIMACINIDAE), is not invalid by reason of being a junior primary homonym. This conserves the name of a heteropod commonly found in Pacific Ocean plankton.

Keywords. Nomenclature; taxonomy; Gastropoda; Heteropoda; Pteropoda; PTEROTRACHEOIDEA; ATLANTIDAE; LIMACINIDAE; *Atlanta*; *Limacina*; *Atlanta inflata*; *Heliconoides inflata*; gastropods.

Ruling

- (1) Under the plenary power it is hereby ruled that the specific name *Atlanta inflata* Gray, 1850 is not invalid by reason of being a junior primary homonym of *Atlanta inflata* d'Orbigny, 1836.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *inflata* Gray, 1850, as published in the binomen *Atlanta inflata*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *Atlanta inflata* d'Orbigny, 1836;
 - (b) *inflata* d'Orbigny, 1836, as published in the binomen *Atlanta inflata*.

History of Case 3494

An application to conserve the specific name of the heteropod *Atlanta inflata* Gray, 1850 (ATLANTIDAE), originally published as a primary homonym of the pteropod *Atlanta inflata* d'Orbigny, 1836 (usually cited as *Limacina inflata*, currently *Heliconoides inflata*) (LIMACINIDAE) by ruling that the name is not invalid by reason of being a junior primary homonym was received from Arie W. Janssen (*National Natural History Museum, Leiden, The Netherlands*) and Roger R. Seapy (*California State University, Fullerton, California, U.S.A.*) on 21 April 2009. After correspondence the case was published in BZN 66: 247–249 (September 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 248. At the close of the voting period on 1 December 2010 the votes were as follows:

Affirmative votes – 22: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Minelli, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Lamas, Lim and Pape.

Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting AGAINST, Lamas said that he felt the authors had presented no quantified evidence on how ‘well-known’ the name *Atlanta inflata* Gray, 1850 was, therefore he saw no strong need to conserve this primary homonymous name, particularly if a junior subjective synonym (*Atlanta quoyii* Gray, 1850) was available. He also noted that the work by Richter (1974), who supported this synonymy, was not listed among the references.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

inflata, *Atlanta*, Gray, 1850, Explanation to the plates. In Gray, M.E. *Figures of mollusious animals selected from various authors, etched for the use of students*, vol. 4, Longman, Brown, Green & Longmans, London, p. 101.

inflata, *Atlanta*, d’Orbigny, 1836, *Voyage dans l’Amérique méridionale ...*, vol. 5(3). Mollusques, pp. 49–184. Bertrand, Paris, p. 174.

OPINION 2267 (Case 3492)***Heliconius tristero* Brower, 1996 and *Heliconius melpomene mocoa* Brower, 1996 (Lepidoptera: NYMPHALIDAE): suppression of *Heliconius melpomene bellula* Brown, 1979 not approved**

Abstract. The Commission has ruled that the application for the proposed conservation of the species-group names *Heliconius tristero* Brower, 1996 and *Heliconius melpomene mocoa* Brower, 1996 (Lepidoptera: NYMPHALIDAE) for mimetic butterflies from the Putumayo region of southeastern Colombia by suppressing the senior name *Heliconius melpomene bellula* Brown, 1979 is not approved.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; NYMPHALIDAE; *Heliconius*; *Heliconius tristero*; *Heliconius melpomene mocoa*; *Heliconius melpomene bellula*; butterflies; Colombia.

Ruling

- (1) It is hereby ruled that the application for the proposed suppression of the name *Heliconius melpomene bellula* Brown, 1979 is not approved.
- (2) No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3492

An application to conserve the species-group names *Heliconius tristero* Brower, 1996 and *Heliconius melpomene mocoa* Brower, 1996 (Lepidoptera: NYMPHALIDAE) for mimetic butterflies from the Putumayo region of southeastern Colombia by suppressing the senior name *Heliconius melpomene bellula* Brown, 1979, was received from Andrew V.Z. Brower (*Middle Tennessee State University, Murfreesboro, TN, U.S.A.*) on 10 April 2009. After correspondence the case was published in BZN 66: 256–260 (September 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 258. At the close of the voting period on 1 December 2010 the votes were as follows:

Affirmative votes – 10: Ballerio, Brothers, Halliday, Harvey, Lamas, Minelli, Papp, Winston, Yanega and Zhou.

Negative votes – 13: Bogutskaya, Bouchet, Grygier, Kojima, Kottelat, Kullander, Lim, Pape, Patterson, Rosenberg, Štys, van Tol and Zhang.

Fautin and Krell abstained. Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Grygier, voting AGAINST, said this Case was premature, inasmuch as it pertained to very recent, ongoing and still unstable taxonomy, and because the hypothetical other 'parent' taxon (besides *tristero*) of the supposedly hybrid holotype of *bellula*

had not been confirmed. Whether that taxon exists, and whether it proves to be a subspecies of *tristero* or a different species entirely, would have a bearing on the availability of *bellula*, as paragraph 5 already suggested (N.B.: 'species' in line 6 of that paragraph should be 'subspecies'). Kottelat, voting AGAINST, was also disappointed in the case and felt it was confused and conjectural. He said that this was a taxonomic rather than a nomenclatural issue. Unless and until demonstrated, the hybrid hypothesis remained only a hypothesis, which was not a reason to suppress a name. He also commented that it was hard to imagine that a name first created in 1996 was now so important that it could not disappear.

No names are placed on Official Lists or Indexes and the issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

OPINION 2268 (Case 3473)***Conops testaceus* Linnaeus, 1767 (currently *Myopa testacea*; Insecta, Diptera): specific name conserved by designation of a neotype**

Abstract. The Commission has conserved the established usage of the specific name *Myopa testacea* (Linnaeus, 1767) for a well-known and widespread species of thick-headed fly (Diptera, CONOPIDAE) by setting aside all previous type fixations and designating a neotype.

Keywords. Nomenclature; taxonomy; Diptera; CONOPIDAE; MYOPINAE; *Myopa*; *Myopa testacea*; thick-headed flies; Palaearctic region.

Ruling

- (1) Under the plenary power all previous type fixations for the nominal species *Conops testaceus* Linnaeus, 1767 are hereby set aside and the male specimen labelled 'NEOTYPE designated by D.K. Clements, J.-H. Stuke & P.J. Chandler' and deposited in the Natural History Museum, London, is hereby designated as the neotype.
- (2) The name *testaceus* Linnaeus, 1767, as published in the binomen *Conops testacea* (spelling emended to *testaceus* in this Opinion) and as defined by the neotype designated in (1) above is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3473

An application to conserve the established usage of the name *Conops testaceus* Linnaeus, 1767 (currently *Myopa testacea*) by setting aside all previous type fixations and designating a neotype was received from D.K. Clements (*Cardiff, U.K.*), J.-H. Stuke (*Leer, Germany*) and P.J. Chandler (*Melksham, Wiltshire, U.K.*) on 21 July 2008. After correspondence the case was published in BZN 65: 294–299 (December 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 297. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 21: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Halliday, Harvey, Kottelat, Lamas, Lim, Minelli, Ng, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 6: Alonso-Zarazaga, Grygier, Kojima, Krell, Kullander and Patterson.

Pyle was on leave of absence.

Although he voted FOR, Grygier said he can not accept the arguments in paragraph 15 on selection of a neotype from north-western Europe when Linnaeus described the species from 'Europa australis'. Grygier said the new type locality will be too far away from the old, and naming of a neotype from southern Europe should await the resolution of the taxonomic situation there. Harvey, voting FOR, pointed out that the specific epithet in this application should be corrected to *Conops testaceus*. Kottelat said he voted FOR because of the reported uncertainties as to whether or not the 'lectotype' was effectively part of the type series. Winston also voted FOR as she felt the proposals could be justified in terms of usage and stability, but expressed concern that the argument seemed very subjective.

Voting AGAINST, Alonso-Zarazaga said that this case had multiple flaws, starting with the name *Conops testacea*, which should have been spelled *Conops testaceus*. He went on to say that, having worked also on Linnaeus's collection, he understood that it might be difficult to accept that a supposed Linnaean type specimen did not match one's expectations but, in his opinion, the authors did not show enough evidence of the type specimen of *C. testaceus* being false. Usually these were the specimens Linnaeus studied. He observed that there was no alternative name available for the species with the wholly black thorax, even if there were synonymous names whose types should have been studied. Alonso-Zarazaga stated that the options were the authors' or none. He went on to add that since the systematics of the group is unclear according to the authors, a vote now on a name would result in unpredictable consequences at the very least. Voting AGAINST, Kojima felt that neither the 'exceptional need' required for designation of a neotype by Article 75.3 nor the 'lack of accord' between the existing name-bearing type and the prevailing usage of names required by Article 75.6 were demonstrated in this Case; he said that the concept of the species known as *Conops testaceus* had been well established and thus there was no exceptional need to designate a neotype and that though the authors were not certain whether Thompson's (1997) lectotype designation was valid, Thompson's interpretation had not been accepted by the dipterist community. He suggested that in order to stabilise the name *Conops testacea* it would be sufficient for the authors to ask the Commission to use its plenary power to rule that the sole specimen standing under the name *Conops testaceus* in the Linnaean collection was not a syntype. Krell, voting AGAINST, said the intent of the authors was certainly useful to maintain stability of usage of *Myopa testacea*. However, the designation of a neotype was not sufficiently justified. He felt it was clear from the original description that the specimen Linnaeus referred to came from Peder/Peter Ascanius. To designate a neotype, Krell would have liked to see a statement that no Ascanius material could be traced, or that Ascanius's collection was destroyed. Krell said that although he hadn't received Ascanius's (1921), biography (*Entomologiske Meddelelser*, 15(1): 35–37), Hylleberg (2009, *Steenstrupia*, 31 (1): 1–101) indicates that Ascanius was affiliated with a natural history collection, the Natural- og Husholdnings-Cabinet (The Naturalia and Housekeeping Cabinet) at Charlottenborg. According to the Danish Natural History Museum (http://zoologi.snm.ku.dk/english/Om_Zoologisk_Museum/History/Museets_historie/), in 1772 the Cabinet was transferred to the university in Copenhagen. Krell thus concluded he would not accept the neotypification without having checked whether any of Ascanius's material was in Copenhagen and would like to see a statement that there

was no suitable specimen to select as a neotype in all of Linnaeus's collections (including Uppsala).

Original reference

The following is the original reference to the name placed on the Official List by the ruling given in the present Opinion:

testaceus, *Conops*, Linnaeus, 1767, *Systema Naturae*, Ed. 12, vol. 1, part 2. Salvii, Holmiae, p. 1006 [spelling emended from *Conops testacea*].

OPINION 2269 (Case 3487)***Megalosaurus crenatissimus* Depéret, 1896 (currently *Majungasaurus crenatissimus*; Dinosauria, Theropoda): designation of a neotype**

Abstract. The prevailing usage and concept of the species *Megalosaurus crenatissimus* Depéret, 1896 (currently *Majungasaurus crenatissimus*) has been conserved by replacement of the existing, non-diagnostic holotype with a neotype.

Keywords. Nomenclature; taxonomy; Reptilia; Archosauria; Dinosauria; Theropoda; ABELISAUROIDAE; *Majungasaurus*; *Megalosaurus*; *Megalosaurus crenatissimus*; Madagascar; Cretaceous.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for the nominal species *crenatissimus* Depéret, 1896, as published in the binomen *Megalosaurus crenatissimus*, are hereby set aside and the specimen MNHN.MAJ 1 (Muséum National d'Histoire Naturelle, Paris) is hereby designated as the neotype.
- (2) The name *Majungasaurus* Lavocat, 1955 (gender: masculine), type species by original designation *Megalosaurus crenatissimus* Depéret, 1896, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *crenatissimus* Depéret, 1896, as published in the binomen *Megalosaurus crenatissimus* and as defined by the neotype designated in (1) above (specific name of the type species of *Majungasaurus* Lavocat, 1955), is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3487

An application to conserve the prevailing usage and concept of the species *Megalosaurus crenatissimus* Depéret, 1896 (currently *Majungasaurus crenatissimus*) by replacing the existing, non-diagnostic holotype with a neotype was received from Matthew T. Carrano (*Smithsonian Institution, Washington, DC, U.S.A.*), David W. Krause (*Stony Brook University, Stony Brook, NY, U.S.A.*), Patrick M. O'Connor (*Ohio University, Athens, OH, U.S.A.*) and Scott D. Sampson (*University of Utah, Salt Lake City, UT, U.S.A.*) on 4 February 2009. After correspondence the case was published in BZN 66: 261–264 (September 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 263. At the close of the voting period on 1 December 2010 the votes were as follows:

Affirmative votes – 25: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting FOR, Kojima felt there was confusion in the usage of the term ‘holotype’ in the title and paragraph 10. In paragraph 1, the authors correctly referred to the specimens as ‘name-bearing type specimens’. As the holotype was not designated in the original publication these specimens were syntypes and no holotype of *Megalosaurus crenatissimus* Depéret, 1896 was ever present unless the original isolated and fragmentary fossil specimens came from a single individual. Lamas also voted FOR and noted that both in the title and some parts of the text of the application the authors referred (wrongly) to a ‘holotype’ of *Megalosaurus crenatissimus* (e.g. in paragraph 10). In fact, that name was based on a type series consisting of ‘isolated and fragmentary fossils’, not upon a single specimen. Nevertheless, Lamas supported the petition for designation of a neotype under the Commission’s plenary power.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

crenatissimus, *Megalosaurus*, Depéret, 1896, *Bulletin de la Société Géologique de France*, (3)24: 188.

Majungasaurus Lavocat, 1955, *Bulletin du Muséum National d’Histoire Naturelle, Paris*, (2)27(3): 259.

OPINION 2270 (Case 3440)***Atrichornis* Stejneger, 1885 (Aves, ATRICHORNITHIDAE): generic name conserved**

Abstract. The Commission has conserved the current usage of the widely used generic name *Atrichornis* Stejneger, 1885, which has been in universal use as a valid generic name for almost 90 years, for the Australian scrub-birds (ATRICHORNITHIDAE), by suppression of the name *Atricha* Gould, 1844, which was used in the incorrect subsequent spelling *Atrichia* for the scrub-birds into the first decade or so of the 20th century.

Keywords. Nomenclature; taxonomy; ATRICHORNITHIDAE; *Atrichornis*; *Atricha*; *Atrichia*; *Atrichornis rufescens*; scrub-birds; Australia.

Ruling

- (1) Under the plenary power it is hereby ruled that the generic name *Atricha* Gould, [January] 1844 is suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *Atrichornis* Stejneger, 1885 (gender: masculine), type species by monotypy *Atrichia rufescens* Ramsay, 1866, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *rufescens* Ramsay, 1866, as published in the binomen *Atrichia rufescens* (specific name of the type species of *Atrichornis* Stejneger, 1885), is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Atricha* Gould, [January] 1844, as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3440

An application to conserve the generic name *Atrichornis* Stejneger, 1885, which has been in universal use as a valid generic name for almost 90 years for the Australian scrub-birds (ATRICHORNITHIDAE), by suppression under Article 23.9.3 of the name *Atricha* Gould, 1844, which was used in the incorrect subsequent spelling *Atrichia* for the scrub-birds into the first decade or so of the 20th century, was received from Richard Schodde (*Australian Biological Resources Study, Canberra, Australia*) and Walter J. Bock (*Columbia University, New York, NY, U.S.A.*) on 19 April 2007. After correspondence the case was published in BZN 65: 42–45 (March 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 44. At the close of the voting period on 1 June 2009 the votes were as follows:

Affirmative votes – 18: Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Kottelat, Krell, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol and Zhang.

Negative votes – 3: Alonso-Zarazaga, Kullander and Lim.

Pyle was on leave of absence.

Alonso-Zarazaga, voting AGAINST, said he considered the application to start from a faulty point: that *The Athenaeum* was a published work in the sense of the Code, because it failed to comply with the requirements of Article 8.1.1: it must be issued for the purpose of providing a public and permanent scientific record. *The Athenaeum* was a newspaper and did not have this as its main purpose. The Oxford Universal Dictionary Illustrated defines newspaper as ‘a printed, now usually daily or weekly, publication containing news, advertisements, literary matter, and other items of public interest’. Nothing indicated that newspapers were published for scientific record of any kind, which was common sense. If the Commission failed to recognise this, anything printed would become ‘scientific record’ and there were thousands of newspapers in all world languages. Many of these might carry names and descriptions in advance of their publication in scientific (‘academic’) journals or books, especially in the case of ‘flagship’ or charismatic animals, like dinosaurs.’ Ng, voting FOR, agreed that the genus name in question for the scrub-birds was worthy of conservation. Changing the status quo helped no one in these circumstances and might affect conservation regimes and research.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Atrichornis Stejneger, 1885, Order XVIII. Passeres. Pp. 458–547 in Kingsley, J.S. (Ed.), *The Standard Natural History*, vol. 4, p. 462.

rufescens, *Atrichia*, Ramsay, 1866, *The Clarence and Richmond Examiner*, vol. 7, n. 362, p. 2, col. 4.

Atricha Gould, [January] 1844, *The Athenaeum*, 848: 90.

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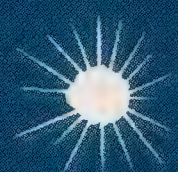
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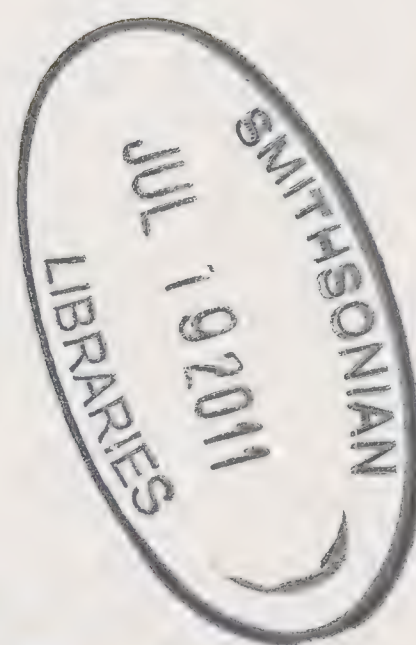
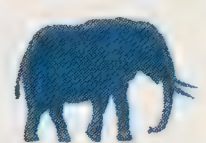
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Cromwell Road

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Cover image: *Gryllotalpa gryllotalpa* (Linnaeus, 1758), the European mole cricket (Latin: *gryllus* – cricket, *talpa* – mole, from its fossorial limbs, fine hairs and subterranean habit). Widespread in the Western Palaearctic region and introduced into parts of the U.S.A. this insect can be an agricultural pest in significant numbers, although in the U.K. it is extremely rare and subject to a U.K. Biodiversity Action Plan (report sightings to g.beccaloni@nhm.ac.uk). Detail from plate 456 of *British Entomology: Original Drawings*, vol. 10, by John Curtis (1862) (© Natural History Museum, London).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 68, part 2 (pp. 93–158)

30 June 2011

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 68, part 1, 31 March 2011) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3555: CHILODONTIDAE Macalister, 1876 (Ciliophora), CHILODINAE Eigenmann, 1910 (Pisces, Characiformes) and CHILODONTINAE Wenz, 1938 (Mollusca, Gastropoda): proposed resolution of homonymy between family-group names. D.G. Herbert & P. Bouchet.

CASE 3556: *Protoretepora* de Koninck, 1878 (Bryozoa, Fenestrata): proposed designation of *Protoretepora crockfordae* Wyse Jackson, Reid & McKinney, 2011 as the type species. P.N. Wyse Jackson, C.M. Reid & F.K. McKinney.

CASE 3557: *Zanthomiza* Swainson, 1837 and *Gliciphila* Swainson, 1837 (Aves, Passeriformes): proposed conservation of original spellings. S.M.S. Gregory, W.E. Boles & L. Christidis.

CASE 3558: *Pleurotoma scabriusculum* Brugnone, 1862 (currently *Mangelia scabriuscula*; Mollusca, Gastropoda): proposed conservation. D. Scarponi, A. Ceregato & J.K. Tucker.

CASE 3559: *Meliboeus violaceus* Kiesenwetter, 1857 (Insecta, Coleoptera): proposed precedence. H. Mühle.

CASE 3560: *Plateosaurus* Meyer, 1837 (Dinosauria, Sauropodomorpha): proposed conservation of usage by designation of a neotype for its type species *Plateosaurus engelhardti* Meyer, 1837. P.M. Galton.

CASE 3561: *Anchisaurus* Marsh, 1885 (Dinosauria, Sauropodomorpha): proposed conservation of usage by designation of a neotype for its type species *Megadactylus polyzelus* Hitchcock, 1865. P.M. Galton.

CASE 3562: *Archaeopteryx lithographica* von Meyer, 1861 (Dinosauria, Theropoda, Aves): proposed correction to Opinion 607. J. Mlíkovský

CASE 3563: *Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE): proposed conservation of the generic name. J. Zijlstra, C. Groves & A. Dunkel.

CASE 3564: *Grallaria fenwickorum* Barrera & Bartels, 2010 (Aves, GRALLARIIDAE): proposed confirmation of unavailability. S. Claramunt.

CASE 3565: *Aphaenops* Bonvouloir, 1862 (Insecta, Coleoptera): proposed conservation of spelling of instead of *Aphoenops*. A. Faille, A. Casale, T.C. Barr, Jr., & A. Vigna Taglianti.

CASE 3566: *Tropidolaemus* Wagler, 1830 and *Cophias wagleri* H. Boie in Schlegel, 1826 (currently *Tropidolaemus wagleri*) (Reptilia, Serpentes, VIPERIDAE): proposed conservation. J.M. Savage.

Contributions to the Discussion on Electronic Publication VII

Comment on the proposed amendment to the *International Code of Zoological Nomenclature*

Lee Namba

Enterprise Architect, ATOS Origin, Paris, France
(e-mail: lee.namba@atosorigin.com)

with Francisco Welter-Schultes, BHL-Europe, as intermediary

As a professional archivist working at the forefront of digital information architecture for ATOS Origin (an international IT company) I was interested in the archiving challenge posed by the ICZN's proposed amendment allowing e-only publication. It has been explained by members of the BHL/BHL-Europe team (for which I am working on digital archiving issues) that the biological community wishes taxonomic publications to remain accessible and in their original format on the timescale of hundreds of years.

I see only two proven technologies that allow preservation of original information over a long time: paper and stone. All other media have not been proven to last long. Stone is clearly problematic because little information can be preserved and must be reduced to text. Short law texts can be carved in stone. Paper is more powerful, but it has shortcomings having to do with its sensitivity to fire and water. A proven strategy to overcome this problem has been the production of multiple identical copies in combination with experienced archival systems paid for by public and private institutions to preserve and protect these copies against vandalism and theft.

In the electronic age – which effectively began in the 1960s – no such archival systems have yet been successfully installed. In fact there are bad experiences where important information was lost. Sometimes the data as such were not lost, but the ability to read (or decode) them no longer exists. Without conserved knowledge on file formats and without knowing and having the programs and versions that were once able to read these files, the electronic information contained will remain inaccessible. An example from NASA's Mars Lander records is well-known (e.g. http://en.wikipedia.org/wiki/Digital_Dark_Age); despite its excellent funding, NASA lost key information due to archiving issues.

In 2001/2002 NASA and others defined a strategy for long-term archiving of electronic information called the Open Archival Information System (OAIS), but this is only a 'functional standard' to build such a system. It involves changes of storage media and formats, running many times over 1000s of years. Many questions remain open for installing such systems; among these are funding sources for transfer processes to update media systems and formats, technologies for copying software and related issues. From a cost perspective, storing information digitally will be expensive since it will be necessary to upgrade the systems technology every generation or so.

ATOS Origin has been asked to help with long-term archival systems for an increasing number of private companies and public institutions that are beginning to realise that they are losing their files. This has often to do with dictated technology

changes or technologies no longer being supported by IBM and other global players in this market.

For example, a major national library has had its original archiving contract no longer supported by the proprietary software provider, so they are forced to change the system. Electronic medical and tax files do not need to be archived for such long durations, and consequently no appropriate strategies have been developed and approved for this kind of public purpose.

For an archival system as required by the nomenclatural community, which involves access to originally deposited and unmodified information in time spans of several centuries, I can only recommend using a system that works with multiple copies printed on paper, and depositing sufficient numbers of such copies in public library institutions. Electronic files can be repeatedly derived from paper copies, in whatever format required by the time and the user's needs.

Case 3518

***Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE): request for a ruling on the availability of the generic name**

Robert H. Cowie

Center for Conservation Research and Training, Pacific Biosciences Research Center, University of Hawaii, 3050 Maile Way, Gilmore 408, Honolulu, Hawaii 96822, U.S.A. (e-mail: cowie@hawaii.edu)

Abstract. The purpose of this application, under Articles 78.2.3 and 80.2.1 of the Code, is to suggest a possible interpretation of Article 1.3.2 in relation to the availability of the generic name *Cornu* Born, 1778 for a genus of land snails (family HELICIDAE). There has been longstanding confusion regarding the correct generic combination for the well-known, common and widely introduced land snail originally described as *Helix aspersa* Müller, 1774, that is, whether it should be placed in *Cornu* Born, 1778, *Cantareus* Risso, 1826 or *Cryptomphalus* Charpentier, 1837. The confusion has arisen primarily because of differing interpretations of Article 1.3.2 in relation to the original proposal of the genus-group name *Cornu* Born, 1778 for the species *Cornu copiae* Born, 1778, which was based on a teratological specimen of *Helix aspersa* Müller, 1774. It is proposed that the wording of Article 1.3.2 be interpreted to confirm the availability of *Cornu* Born, 1778.

Keywords. Nomenclature; taxonomy; Mollusca; Gastropoda; Pulmonata; HELICIDAE; *Helix*; *Cantareus*; *Cornu*; *Cryptomphalus*; *Cornu copiae*; *Helix aperta*; *Helix aspersa*; brown garden snail; Europe; introduced species.

1. The well-known, common and widely introduced Western European land snail species (the brown garden snail, common garden snail or simply the garden snail) that has long been known as *Helix aspersa* Müller, 1774 (p. 59) (e.g. Pilsbry, 1894, p. 311; Kerney & Cameron, 1979, p. 205) is an ecologically important species, with established introductions in many regions of the world (Barker, 1999, p. 62; Cowie, 2001, p. 125; Roth & Sadeghian, 2003, p. 35; Herbert, 2010, p. 50; Stanisic et al., 2010, p. 520). It is a commercially important species in France and Belgium, and to a lesser extent in the rest of Europe and North Africa, in French known as the 'escargot petit-gris' (e.g. Bonnet et al., 1990; Jess & Marks, 1995; Dupont-Nivet et al., 2000; Herbert & Kilburn, 2004). There is therefore a considerable body of scientific and non-scientific literature on this species, yet there is much recent and continuing confusion and hence lack of stability regarding its correct generic placement. The name *Helix aspersa* Müller, 1774 is on the Official List of Specific Names in Zoology (Opinion 336, Opinions and Declarations, 10: 77–108, March 1955). While there is almost general agreement that it should not be retained in *Helix* Linnaeus, 1758, there is much disagreement about its correct placement. It has been placed by various modern authors in the genera *Cornu* Born, 1778 (e.g. Falkner et al., 2001, p. 65; Anderson, 2005, p. 627; Cowie et al., 2008, p. 270; Ligaszewski et al., 2009,

p. 173; Guiller & Madec, 2010, p. 1; Stanisić et al., 2010, p. 520), *Cryptomphalus* Charpentier, 1837 (e.g. Paniagua & Vázquez, 1976, p. 617; Robinson, 1999, p. 419; Bojat et al., 2001, p. 155; Kiss & Magnin, 2003, p. 53; Brieva et al., 2008, p. 15) and *Cantareus* Risso, 1826 (e.g. Barker, 1999, p. 62; Koene & Schulenburg, 2005, p. 2; Manganelli et al., 2005, p. 504; Wade et al., 2006, p. 598, 2007, p. 412; Ansart et al., 2007, p. 71). Some authors have accepted the availability and validity of these genus-group names but as subgenera of *Helix* Linnaeus, 1758. For example, Waldén (1976, p. 24) and Roth & Sadeghian (2003, p. 35) placed *H. aspersa* in *Helix* subgenus *Cornu*, while Zilch (1960, p. 722) and Giusti (1969, p. 86, 1977, p. 126) placed it in *Helix* subgenus *Cryptomphalus*, and Zilch (1960, p. 723), Giusti (1969, p. 88) and Roth & Sadeghian (2003, p. 35) placed the related *Helix aperta* Born, 1778 in *Helix* subgenus *Cantareus*. Whether or not any of these three genus-group names are synonyms of each other has also been the subject of much confusion. Some authors, either unable or unwilling to decide on the correct placement of *aspersa*, have left it in *Helix* (e.g. Cowie, 1997, p. 20; Rogers & Chase, 2002, p. 290; Herbert & Kilburn, 2004, p. 275; Cameron et al., 2006, pp. 19–20). While there has been discussion of this issue (e.g. Giusti et al., 1996, pp. 490–491; Barker, 1999, pp. 67–68; Gerber, 2000, p. 44; Roth & Sadeghian, 2003, p. 35; Anderson, 2005, p. 627; Herbert, 2010, p. 52) and the consensus seems to lean towards accepting the availability and validity of *Cornu* and the placement of *aspersa* in *Cornu*, no definitive statement has been formally published and different treatments continue to appear in publications. The purpose of this application is formally to resolve this nomenclatural confusion, which stems essentially from the different views on the availability of the genus-group name *Cornu* Born, 1778. These differing views reflect the difficulty of interpreting Article 1.3.2 of the Code.

2. The type species of *Helix* Linnaeus, 1758 (p. 768) is *Helix pomatia* Linnaeus, 1758 (p. 771), by subsequent designation of Montfort (1810, p. 231) (see Melville & Smith, 1987, p. 103). It has been appreciated long ago that this species and *Helix aspersa* Müller, 1774 are quite different, e.g. by Charpentier (1837, pp. 5–6) and Moquin-Tandon (1855, pp. 174, 179), who both placed them in different subgenera of *Helix*. And there is now general agreement that they are sufficiently different to indeed warrant placement in different genus-group taxa (e.g. Waldén, 1976, p. 24; Giusti et al., 1996, pp. 490, 497; Barker, 1999, p. 67; Robinson, 1999, pp. 419, 437; Falkner et al., 2001, p. 65; Anderson, 2005, p. 613; Koene & Schulenburg, 2005, p. 5; Manganelli et al., 2005, pp. 504–505; Ligaszewski et al., 2009, p. 173; Herbert, 2010, p. 52).

3. The type species of *Cornu* Born, 1778 (p. 371) is *Cornu copiae* Born, 1778 (p. 371), by monotypy. *Cornu copiae* was re-described and illustrated by Born (1780, p. 362, pl. 13, figs. 10, 11), with an additional text illustration, in fact the same one that appeared, without being referred to in the text, on the last page of the 1778 publication. It is based on a scalariform (i.e. teratological) specimen of *aspersa* Müller, 1774, on which there has been no disagreement. Some authors have considered *copiae* and *Cornu* unavailable based on their interpretation of Article 1.3.2 of the Code, which states ‘Excluded from the provisions of the Code are names proposed . . . for teratological specimens as such’ (e.g. Giusti et al., 1996, p. 491; Barker, 1999, p. 68). Others have argued that this means ‘in distinction from normal specimens of the same species’ (Roth & Sadeghian, 2003, p. 60), and view Born’s

name as having been introduced for what he considered a valid and distinct species, rather than explicitly for a teratological specimen of an already valid species; in which case *copiae* and *Cornu* are available names (e.g. Gerber, 2000, p. 44). The words ‘as such’, and their explanation in the Glossary of the Code as meaning ‘Being strictly what has been cited’, are the source of the confusion. Shileyko (2006, p. 1817) treated *Cornu* as a nomen oblitum, with the subsequently published *Cryptomphalus* as the valid name. However, Shileyko’s action was inappropriate under Article 23.9.1.1 of the Code, as *Cornu* had been used as a valid name after 1899 (e.g. citations above), and his action did not fully comply with Article 23.9.2. Born clearly intended *Cornu* as a genus name, as it appeared as a heading in the same format as his other genus headings. His use of *copiae* as the species name, perhaps intended to be witty in combination with the genus name, is probably a reflection of the ‘cornu copiae’ (two words) in its original meaning derived from Greek mythology, the ‘horn of plenty’ (*cornu*, horn; *copiae*, genitive of *copia*, plenty), a spiralled goat’s horn filled with fruit and grain (*Encyclopaedia Britannica*, 2010), which the scalariform shell clearly resembles. Modern English usage is ‘cornucopia’ as a single word, generally meaning a great abundance of something, although, especially in North America, it also means a hollow, horn-shaped wicker basket filled with various kinds of festive fruit and other produce.

4. Gmelin (1791, p. 3745) listed Born’s name as the species epithet (not a species-genus combination) ‘*Cornu copiae*’ in the marine polychaete genus *Serpula* Linnaeus, 1758 (p. 1264), clearly incorrectly. Subsequently, *Cornu copiae* was ignored by most major nineteenth century authors (e.g. Férussac, 1821–1822; Charpentier, 1837; Anton, 1839, p. 33; Pfeiffer, 1853; Reeve, 1854; Moquin-Tandon, 1855; Locard, 1880; Tryon, 1888; Pilsbry, 1894), with some exceptions. Deshayes (1832, p. 237) noted a monstrous variety of *Helix aspersa* described as ‘cornu-formi’ without reference to Born, and subsequently (Deshayes, 1838, p. 33) cited Born’s illustration, but without giving the name itself, in the synonymy of *Helix aspersa*. Beck (1838, p. 40) listed ‘*Cornucopia*’, attributed to Born and also citing Gmelin, in the synonymy of *aspersa* (in error as ‘*adpersa*’) as a monstrous form with separated whorls (‘*monstrosa anfractibus dissolutis*’). Gray (1847, p. 171) listed ‘*Cornucopia*, Born’ as a genus name and a synonym of ‘*Helix* Risso, 1826’, with type species *Helix ‘adpersa*’, presumably again in error for *aspersa*. Forbes & Hanley (1853, p. 45), cited Born’s work in the synonymy of *aspersa*, under ‘Monstrosities’, but did not list the actual name. Taylor (1910, p. 268, fig. 325) listed it as ‘Monst. *cornucopiae* Gmelin’, under *aspersa*, but with ‘*Cornu copiae* Born’, as the earliest entry in the synonymy. Germain (1930, pp. 182–189) made no mention of it. While this survey of the literature has not been exhaustive, Taylor’s treatment may be the first to approach formal and correct synonymisation of the genus-species combination *Cornu copiae* as a synonym of *Helix aspersa* by including Born’s name correctly as a genus-species combination. Nonetheless, all these various treatments of Born’s names (except Gmelin), together as one word as either a genus-group synonym of *Helix* or a species-group synonym of *aspersa*, or by implication by citing Born’s work, clearly intended that *Cornu copiae* Born be treated as a monstrous form and therefore a junior synonym of *aspersa*. Modern authors (see the preceding paragraph) agree with this interpretation. However, for much of the twentieth century, malacologists rarely referred to *Cornu*, with the exception of Pilsbry (1948, p. 1091), who acknowledged it as a senior

synonym of *Cryptomphalus* (as a subgenus of *Helix*) and synonymised *Cornu copiae* Born, 1778 with *Helix aspersa* Müller, 1774. Pilsbry's recognition of *Cornu* was ignored, possibly because it was buried in the 'Additions and Corrections' of his work, until Waldén (1976, pp. 24–25) again acknowledged the availability of *Cornu* and set the scene for the subsequent discussions, referred to above, that have led to the current position of the availability of *Cornu* needing to be clarified.

5. The type species of *Cantareus* Risso, 1826 (p. 64) is *Helix naticoides* Draparnaud, 1801 (p. 78), a subjective junior synonym of *Helix aperta* Born, 1778 (p. 399) (e.g. Forbes & Hanley, 1853, p. 43; Pilsbry, 1889, p. 255, Woodward, 1917, p. 220; Zilch, 1960, p. 723), by monotypy.

6. The type species of *Cryptomphalus* Charpentier, 1837 (p. 5) is *Helix aspersa* Müller, 1774 (p. 59), by subsequent designation of Pilsbry (1889, p. 235). Hence, if *Cornu* is considered available, with type species *Cornu copiae* (= *Helix aspersa*), *Cryptomphalus* is a junior subjective synonym of *Cornu*, subjective because it depends on the judgment, which is confirmed in the literature, of *copiae* and *aspersa* being synonyms (see above). In addition, with *Cornu* considered available, if *aperta* and *aspersa* are considered congeneric, then *Cantareus* (type species *Helix naticoides* (= *Helix aperta*, see above)) also becomes a junior subjective synonym of *Cornu*.

7. Held (1837, p. 910) placed *Helix aspersa* Müller, 1774 in combination with an additional genus-group name, his new name *Coenatoria* Held, 1837. The type species of *Coenatoria* is *Helix pomatia* Linnaeus, 1758, by subsequent designation of Herrmannsen (1847, p. 269), which thereby renders *Coenatoria* a junior objective synonym of *Helix* Linnaeus, 1758. Subsequently, Shileyko (2006, p. 1817) invalidly designated *aspersa* as the type species of *Coenatoria* and placed *Coenatoria* with *Cornu* in the synonymy of *Cryptomphalus*. *Coenatoria* has not been mentioned in the controversy over the correct generic placement of *aspersa*.

8. While the relationship of *aperta* and *aspersa* is a taxonomic rather than a nomenclatural issue and thus not under the jurisdiction of the Commission, the correct interpretation of Article 1.3.2 of the Code is a purely nomenclatural issue. This is the underlying issue in the present case. The correct interpretation seems to be that *Cornu copiae* Born, 1778 is available despite being based on a teratological specimen, since the description did not refer to the specimen as teratological 'as such', that is, it did not explicitly acknowledge it as an aberrant or monstrous specimen of a known species, and there is no explicit indication that it was not intended as a genuine description of a new species. Hence, *Helix aspersa* Müller, 1774, as the subjective senior synonym of the type species of *Cornu*, *Cornu copiae* Born, 1778, should be placed in combination with *Cornu*, the oldest available genus-group name, if *Helix* Linnaeus, 1758 is considered inappropriate.

9. Considering the importance of stable use of the name of this snail the Commission is requested, in accordance with Articles 78.2.3 and 80.2.1, to use its specific power to interpret the provisions of Article 1.3.2 of the Code and to rule on the availability of the name *Cornu copiae* Born, 1778.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to rule that the name *copiae* Born, 1778, as published in the binomen *Cornu copiae*, is not unavailable by reason of being based on a teratological specimen, as it was not explicitly described as such, under Article 1.3.2 of the Code;

- (2) to place on the Official List of Generic Names in Zoology the name *Cornu* Born, 1778 (gender: neuter), type species by monotypy *Cornu copiae* Born, 1778, with the endorsement that it is not unavailable by reason of being based on a teratological specimen, as ruled in (1) above;
- (3) to amend the entry on the Official List of Specific Names in Zoology for the name *aspersa* Müller, 1774, as published in the binomen *Helix aspersa* to record that this is the valid name of the type species of *Cornu* Born, 1778 (a senior subjective synonym of *copiae* Born, 1778, as published in the binomen *Cornu copiae*).

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References

- Anonymous.** 2010. Cornucopia. In *Encyclopaedia Britannica*. Retrieved December 15, 2010, from Encyclopaedia Britannica Online: <http://www.britannica.com/EBchecked/topic/138081/cornucopia>
- Anderson, R.** 2005. An annotated list of the non-marine Mollusca of Britain and Ireland. *Journal of Conchology*, **38**(6): 607–637.
- Ansart, A., Madec, L. & Vernon, P.** 2007. Supercooling ability is surprisingly invariable in eggs of the land snail *Cantareus aspersus*. *Cryobiology*, **54**: 71–76.
- Anton, H.E.** 1838. *Verzeichniss der Conchylien welche sich in der Sammlung von Hermann Eduard Anton befinden*. xvi, 110 pp. Eduard Anton, Halle.
- Barker, G.M.** 1999. *Naturalised terrestrial Stylommatophora (Mollusca: Gastropoda)*. Fauna of New Zealand 38. 254 pp. Manaaki Whenua Press, Lincoln, Canterbury, New Zealand.
- Beck, H.** 1837–1838. *Index Molluscorum praesentis aevi musei principis augustissimi Christiani Frederici. Fasciculus primus et secundus. Mollusca gastrapoda pulmonata*. 124 pp. [Published by the author], Hafnia [= Copenhagen].
- Bojat, N.C., Sauder, U. & Haase, M.** 2001. The spermathecal epithelium, sperm and their interactions in the hermaphroditic land snail *Arianta arbustorum* (Pulmonata, Stylommatophora). *Zoomorphology*, **120**: 149–157.
- Bonnet, J.-C., Aupinel, P. & Vrillon, J.-L.** 1990. *L'escargot Helix aspersa: biologie-élevage*. 123 pp. Institut national de la recherche agronomique, Paris.
- Born, I. von.** 1778. *Index rerum naturalium Musei Caesarei Vindobonensis. Pars I^{ma} Testacea. Verzeichniß der natürlichen Seltenheiten des k. k. Naturalien Cabinets zu Wien. Erster Theil. Schalthiere*. xlii, 458, [82] pp., 1 pl. J.P. Kraus, Vindobonae [= Vienna].
- Born, I. von.** 1780. *Testacea Musei Cæsarei Vindobonensis, quae jussu Mariæ Theresiæ Augustæ disposuit et descripsit Ignatius a Born*, *Equ.* xxxvi, 442, [18] pp., 18 pls. J.P. Kraus, Vindobonae [= Vienna].
- Brieva, A., Philips, N., Tejedor, R., Guerrero, A., Pivel, J.P., Alonso-Lebrero, J.L. & Gonzalez, S.** 2008. Molecular basis for the regenerative properties of a secretion of the mollusk *Cryptomphalus aspersa*. *Skin Pharmacology and Physiology*, **21**: 15–22.
- Cameron, R.A.D., da Cunha, R.M.T. & Frias Martins, A.M.** 2007. Chance and necessity: land-snail faunas of São Miguel, Azores, compared with those of Madeira. *Journal of Molluscan Studies*, **73**: 11–21.
- Charpentier, J. de.** 1837. Catalogue des mollusques terrestres et fluviatiles de la Suisse. Formant la seconde partie de la faune Helvétique. *Neue Denkschriften der Allgemeinen Schweizerischen Gesellschaft für die Gesamten Naturwissenschaften*, **1**(2): 1–28, pls. 1–2.
- Cowie, R.H.** 1997. Catalog and bibliography of the nonindigenous nonmarine snails and slugs of the Hawaiian Islands. *Bishop Museum Occasional Papers*, **50**: 1–66.

- Cowie, R.H. 2001. Invertebrate invasions on Pacific islands and the replacement of unique native faunas: a synthesis of the land and freshwater snails. *Biological Invasions*, **3**: 119–136.
- Cowie, R.H., Hayes, K.A., Tran, C.T. & Meyer, W.M., III. 2008. The horticultural industry as a vector of alien snails and slugs: widespread invasions in Hawaii. *International Journal of Pest Management*, **54**: 267–276.
- Deshayes, G.P. 1830–1832, *Encyclopédie méthodique. Histoire naturelle des vers. Tome second.* vii, 256, 594 pp. Agasse, Paris.
- Deshayes, G.P. 1838, Tome huitième. Mollusques. Pp. 1–660 in Deshayes, G.P. & Milne Edwards, H., *Histoire naturelle des animaux sans vertèbres . . . Deuxième édition. Revue et augmentée de notes présentant les faits nouveaux dont la science s'est enrichie jusqu'à ce jour.* J.B. Baillière, Paris.
- Draparnaud, J. [1801]. *Tableau des mollusques terrestres et fluviatiles de la France.* 116 pp. Renaud, Montpellier; Bossange, Masson & Besson, Paris.
- Dupont-Nivet, M., Coste, V., Coinon, P., Bonnet, J.-C. & Blanc, J.-M. 2000. Rearing density effect on the production performance of the edible snail *Helix aspersa* Müller in indoor rearing. *Animal Research*, **49**: 447–456.
- Falkner, G., Bank, R.A. & von Proschwitz, T. 2001. CLECOM-PROJECT. Checklist of the non-marine molluscan species-group taxa of the states of northern, Atlantic and central Europe (CLECOM I). *Heldia*, **4**: 1–76.
- de Férussac, A.E.J.P.J.F.d'A. 1821–[1822]. *Tableaux systématiques des animaux mollusques classés en familles naturelles, dans lesquels on a établi la concordance de tous les systèmes; suivis d'un prodrome générale pour tous les mollusques terrestres ou fluviatiles, vivants ou fossiles.* xlvii, i, 27, 111 pp. A. Bertrand, Paris; J.B. Sowerby, London.
- Forbes, E. & Hanley, S. 1853. *A history of British Mollusca, and their shells. Volume IV. Pulmonifera and Cephalopoda.* vi, 301, [1] pp., 133 pls. John van Voorst, London.
- Gerber, J. 2000. [Review of] Giusti, F., Manganelli, G. & Schembri, P.J. (1996): The non-marine molluscs of the Maltese Islands. *Heldia*, **3**: 42–44.
- Germain, L. 1930. *Faune de France 21. Mollusques terrestres et fluviatiles.* 477 pp. Paris. Paul Lechevalier.
- Giusti, F. 1969. A malacological survey of the small Tuscan islands. *Malacologia*, **9**: 85–91.
- Giusti, F. 1977. Biogeographical data on the malacofauna of Sardinia. *Malacologia*, **16**: 125–129.
- Giusti, F., Manganelli, G. & Schembri, P. 1996. The non-marine molluscs of the Maltese Islands. *Monografie di Museo Regionale di Scienze Naturali, Torino*, **15**: 1–607.
- Gmelin, J.F. 1791. *Caroli a Linné, systema naturae per regna tria naturae secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis.* Ed. 13, vol. 1, part VI. Pp. 3021–3910. G.E. Beer, Lipsia [= Leipzig].
- Gray, J.E. 1847. A list of the genera of Recent Mollusca, their synonyma and types. *Proceedings of the Zoological Society of London*, [1847]: 129–219.
- Guiller, A. & Madec, L. 2010. Historical biogeography of the land snail *Cornu aspersum*: a new scenario inferred from haplotype distribution in the western Mediterranean basin. *BMC Evolutionary Biology*, **10**: 18.
- Held, F. 1837. Notizen über die Weichtiere Bayerns. *Isis*, [1837](12): 901–919.
- Herbert, D.G. 2010. *The Introduced Terrestrial Mollusca of South Africa.* SANBI Biodiversity Series 15. vi, 108 pp. South African National Biodiversity Institute, Pretoria.
- Herbert, D. & Kilburn, R. 2004. *Field guide to the land snails and slugs of eastern South Africa.* [v], 336 pp. Natal Museum, Pietermaritzburg.
- Herrmannsen, A.N. 1846–1847. *Indicis generum malacozoorum primordia . . . Praetermittuntur Cirripedia, Tunicata et Rhizopoda. Vol. I.* xxvii, 637 pp. Fischer, Cassel.
- Jess, S. & Marks, R.J. 1995. Population density effects on growth in culture of the edible snail *Helix aspersa* var. *maxima*. *Journal of Molluscan Studies*, **61**: 313–323.
- Kerney, M.P. & Cameron, R.A.D. 1979. *Field guide to the land snails of Britain and north-west Europe.* 288 pp. Collins, London.
- Kiss, L. & Magnin, F. 2003. The impact of fire on some Mediterranean land snail communities and patterns of post-fire recolonization. *Journal of Molluscan Studies*, **69**: 43–53.

- Koene, J.M. & Schulenburg, H. 2005. Shooting darts: co-evolution and counter-adaptation in hermaphroditic snails. *BMC Evolutionary Biology*, **5**: 25.
- Ligaszewski, M., Surówka, K. & Stekla, J. 2009. The shell features of *Cornu aspersum* (synonym *Helix aspersa*) and *Helix pomatia*: characteristics and comparison. *American Malacological Bulletin*, **27**: 173–181.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Locard, A. 1880. Études sur les variations malacologiques d'après la faune vivante et fossile de la partie centrale du bassin du Rhone. *Annales de la Société d'Agriculture Histoire Naturelle et Arts Utiles de Lyon* (5)2: 567–1045.
- Manganelli, G., Salomone, N. & Giusti, F. 2005. A molecular approach to the phylogenetic relationships of the western palaearctic Helicoidea (Gastropoda: Stylommatophora). *Biological Journal of the Linnean Society*, **85**: 501–512.
- Melville, R.V. & Smith, J.D.D. 1987. *Official lists and indexes of names and works in zoology*. 366 pp. International Trust for Zoological Nomenclature, London.
- Montfort, D. de. 1810. *Conchyliologie systématique, et classification méthodique des coquilles . . . Coquilles univalves, non cloisonnées*. Tome second. 676 pp. F. Schoell, Paris.
- Moquin-Tandon, A. 1855. *Histoire naturelle des mollusques terrestres et fluviatiles de France contenant des études générales sur leur anatomie et physiologie et la description particulière des genres, des espèces et des variétés*. Tome second. 646 pp. J.-B. Baillière, Paris.
- Müller, O.F. 1774. *Vermium terrestrium et fluviatilium, seu animalium infusoriorum, helminthicorum, et testaceorum, non marinorum, succincta historia. Volumen alterum*. xxxv, 214, [10] pp. Heineck & Faber, Havniae [= Copenhagen] & Lipsiae [= Leipzig].
- Paniagua, R. & Vázquez, J.J. 1976. A special pattern of the smooth endoplasmic reticulum in the kidney of the snail *Cryptomphalus aspersa*. *Journal of Cell Science*, **22**: 617–622.
- Pfeiffer, L. 1853. *Monographia heliceorum viventium. Sistens descriptiones systematicas et criticas omnium huius familiae generum et specierum hodie cognitarum. Volumen tertium. Supplementum. Sistens enumerationem auctam omnium huius familiae generum et specierum hodie cognitarum, accedentibus descriptionibus novarum specierum et enumeratione fossilium*. viii, 711 pp. F.A. Brockhaus, Lipsia [= Leipzig].
- Pilsbry, H.A. 1888–1889. Continuation of Tryon's monograph of the Helicidae. Pp. 120–296 in Tryon, G.W., Jr., *Manual of conchology; structural and systematic. With illustrations of the species. Second series: Pulmonata. Vol. IV. Helicidae: – Vol. II*. 296 pp. [pp. 1–192, 1888; pp. 193–296, 1889], 69 pls. Academy of Natural Sciences, Philadelphia.
- Pilsbry, H.A. 1894. *Manual of conchology; Structural and systematic. With illustrations of the species. Second series: Pulmonata. Vol IX. (Helicidae, Vol. 7.) Guide to the Study of Helices*. xlviii, 366 pp., 71 pls. Academy of Natural Sciences, Philadelphia.
- Pilsbry, H.A. 1948. *Land Mollusca of North America (north of Mexico). Volume II. Part 2*. xlvii, 521–1113 pp. Academy of Natural Sciences, Philadelphia.
- Reeve, L.A. 1854. *Conchologica iconica: or, illustrations of the shells of molluscos animals. Vol. VII. Containing a monograph of the genus Helix*. [xx] pp., pls. 1–209, text. Lovell Reeve, London.
- Risso, A. 1826. *Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes*. Tome quatrième. [3], vii, 439 pp., [12] pls. F.-G. Levrault, Paris.
- Robinson, D.G. 1999. Alien invasions: the effects of the global economy on non-marine gastropod introductions into the United States. *Malacologia*, **41**(2): 413–438.
- Rogers, D.W. & Chase, R. 2002. Determinants of paternity in the garden snail *Helix aspersa*. *Behavioral Ecology and Sociobiology*, **52**: 289–295.
- Roth, B. & Sadeghian, P.S. 2003. Checklist of the land snails and slugs of California. *Santa Barbara Museum of Natural History Contributions in Science*, **3**: 1–81.
- Stanisic, J., Shea, M., Potter, D. & Griffiths, O. 2010. *Australian land snails. Volume 1. A field guide to eastern Australian species*. xii, 591 pp. Mauritius, Bioculture Press.
- Taylor, J.W. 1906–1914. *Monograph of the land & freshwater Mollusca of the British Isles*. vii, [i], 522 pp., 35 pls. Leeds, Taylor Brothers.
- Tryon, G.W. 1888. *Manual of conchology; Structural and systematic. With illustrations of the species. Second series: Pulmonata. Vol IV. (Helicidae: – Vol. II.) Guide to the study of Helices*. 296 pp., 69 pls. The author, Academy of Natural Sciences, Philadelphia.

- Wade, C.M., Mordan, P.B. & Naggs, F.** 2006. Evolutionary relationships among pulmonate land snails and slugs (Pulmonata, Stylommatophora). *Biological Journal of the Linnean Society*, **87**: 593–610.
- Wade, C.M., Hudelot, C., Davison, A., Naggs, F. & Mordan, P.B.** 2007. Molecular phylogeny of the helicoid land snails (Pulmonata: Stylommatophora: Helicoidea), with special emphasis on the Camaenidae. *Journal of Molluscan Studies*, **73**: 411–415.
- Waldén, H.K.** 1976. A nomenclatural list of the land Mollusca of the British Isles. *Journal of Conchology*, **29**: 21–25.
- Woodward, B.B.** 1917. On the adventures of the genus name *Lucena*. *Proceedings of the Malacological Society of London*, **12**(5): 220.
- Zilch, A.** 1959–1960. *Handbuch der Paläozoologie. Band 6 Gastropoda. Teil 2 Euthyneura*. xii, 834 pp. [pp. 1–400, 1959; pp. 401–834, i–xii, 1960], Gebrüder Bornträger, Berlin.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3546***Praeradiolites* Douvillé, 1903 (Bivalvia, RADIOLITIDAE): proposed designation of *Sphaerulites ponsiana* d'Archiac, 1837 as the type species**

Jose Maria Pons and Enric Vicens

Departament de Geologia, Facultat de Ciències, Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain

(e-mail: josepmaria.pons@uab.cat; enric.vicens@uab.cat)

Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve the usage of the generic name *Praeradiolites* Douvillé, 1902 by designation of *Sphaerulites ponsiana* d'Archiac, 1837 as the type species. The current type species of *Praeradiolites*, *Radiolites fleuriauxus* d'Orbigny, 1842, has characteristic features of *Eoradiolites* Douvillé, 1909 instead of *Praeradiolites* of current usage, and cannot be used as the objective standard of reference for the application of the name *Praeradiolites*. Maintaining the present situation would entail a series of disruptive taxonomic changes and threaten stability. We propose the replacement of the type species of *Praeradiolites*, which appears to be a less disruptive solution and may better guarantee wide acceptance and stability.

Keywords. Nomenclature; taxonomy; Bivalvia; RADIOLITIDAE; *Praeradiolites*; *Eoradiolites*; *Sphaerulites*; *fleuriauxus*; *ponsiana*; Cretaceous; Tethys.

1. *Praeradiolites* and *Eoradiolites* are two radiolitid genera abundantly reported in rudist palaeontological publications (a list of 71 most recent references on both genera is held by the Secretariat), their diagnostic features are well established and widely accepted, and both include a large number of species (Steuber, 2002). However, the current usage of the generic name *Praeradiolites* is not in accord with the characters of its type species.

2. The generic name *Praeradiolites* was established by Douvillé (1903, p. 469), with *Radiolites fleuriauxus* d'Orbigny, 1842 (misspelled by Douvillé as *Radiolites fleuriau*) originally designated as its type species. The name *Praeradiolites* Douvillé, 1903 is on the Official List of Generic Names in Zoology and *Radiolites fleuriauxus* d'Orbigny, 1842 (spelled as *fleuriauxi*) was placed on the Official List of Specific Names in Zoology by Opinion 856 (BZN 25(2/3): 86–97, September 1968). *Radiolites fleuriauxus* was named after Louis Benjamin Fleuriau de Bellevue, a naturalist of La Rochelle. The spelling *fleuriauxus* is an adjectival epithet based on the family name Fleuriau. The spelling *fleuriauxi* (as in Opinion 856) is justified by neither etymology nor usage and we propose to correct it to *fleuriauxus* (as already used in Kühn's (1932) catalogue). In Opinion 856 the publication date for *Praeradiolites* Douvillé is given as 1902, although the correct date is 1903, as the date '27 Janvier 1903' was printed on p. 385 of vol. 2 of *Bulletin de la Société Géologique de France*. Neave (1940, p. 884) gives the correct date 1903.

3. Douvillé (1903, pp. 468–469, pl. 15, figs. 1–2, 4, 6–8) clearly described and illustrated the characters of *R. fleuriaus* (which he misspelled as *fleuriaui*) and other related species. In the same paper, on p. 469, using *Praeradiolites ponsianus* as an example, he described the modifications occurring in more recent species. Douvillé (1903, p. 470) stated ‘*Bien que le genre Praeradiolites comprenne plus particulièrement les formes anciennes qui n’ont que trois bourrelets ou plis, nous y réunirons encore ces formes plus récentes soit pleuroconques, soit plagiocconques et nous lui donnerons les caractères suivants: Genre Praeradiolites: il comprend toutes les formes de Radiolitines qui présentent une arête cardinale, des lames externes lisses ou légèrement ondulées et essentiellement, dans la région postérieure, deux sinus E et S et un pli ventral; le pli intermédiaire I entre les deux sinus est plus ou moins développé et enfin un pli dorsal PD, peut prendre à l’extrémité de la région plissée une importance comparable à celle du pli ventral V.*’ (English translation: Although the genus *Praeradiolites* embraces more particularly the ancient forms having only three ‘bourrelets’ or folds, we also add those more recent forms, pleuroconch or plagiocconch and we shall give the following characters: The genus *Praeradiolites*: comprising all RADIOLITINAE forms presenting a ligament ridge, smooth or slightly undulated outer lamellae and essentially, in the posterior region, two sinuses E and S and a ventral fold; the intermediate fold I between the two sinuses is more or less developed and finally a dorsal fold PD, may attain an importance comparable to that of the ventral fold V at the end of the folded region).

4. Toucas (1907, pp. 17–46, pls. 1–8) transferred some of the earlier species of *Praeradiolites* to the genus *Agria* Matheron, 1878, keeping the others in *Praeradiolites*. The generic name *Agria* being preoccupied, Kühn (1932) proposed *Agriopleura* to replace it.

5. The generic name *Eoradiolites* was proposed, in a very short note, by Douvillé (1909, p. 77) and *E. davidsoni* was originally designated as its type species. Douvillé (1910, pp. 22–23) provided more details about *Praeradiolites* and *Eoradiolites* and made comparisons. He also (1910, pp. 20–21) stressed the differences in myophore development between species of *Agria* and *Eoradiolites*. The genus *Eoradiolites* was proposed for those primitive species formerly attributed to *Praeradiolites* that possessed two radial down-and-outward folds (radial bands at the outer surface) besides the anterior fold (also a down-and-outward fold), with *E. davidsoni* as type species, as opposed to the other species with two radial up-and-inward folds (radial sinus on the outer surface) limited by three radial down-and-outward folds. Hence, with regard to this feature, the two genera *Eoradiolites* and *Praeradiolites* correspond to the two groups of species, earlier (primitive) and more recent (evolved) respectively, formerly recognised by Douvillé (1902, p. 469) within *Praeradiolites* (groups of *P. fleuriaus* and of *P. ponsianus* in Douvillé (1910, p. 22)). Nevertheless, *fleuriaus*, with the characteristics of *Eoradiolites*, is the type species of *Praeradiolites*.

6. Pons et al. (2011) fully described and figured the characteristics of *P. fleuriaus* on specimens from Italy, and Pons et al. (in press) revised the specimens from the original locality preserved at the École nationale supérieure des Mines de Paris Collection, Université Claude Bernard Lyon I, showing that they all agree with those of *Eoradiolites*. Macé-Bordy (2007) designated a lectotype from the specimens in d’Orbigny’s collection. The lectotype and three paralectotypes show characters of

Eoradiolites, as described in Pons et al. (2010, 2011, in press): ‘Growth lamellae of right valve steeply inwardly inclined, with three main radial down-and-outward folds AF, VF and PF. Radial structures VF and PF produce smooth, flat ribs (radial bands) on the outer surface; the area between VF and PF simple depression that may bear ribs. Outer shell layer structure is non-compact with continuous radial ridges producing ribbed commissural lip. Ligament ridge is triangular, base distal. Left valve with nearly flat centre and inwards inclined margin’.

7. *Radiolites fleuriauxus* d’Orbigny, 1842 is the type species of *Praeradiolites* Douvillé, 1903 and should provide the objective standard of reference for the application of the name *Praeradiolites*. Nevertheless, it presents the characteristic features of *Eoradiolites* Douvillé, 1909 instead of those of *Praeradiolites* as in current usage.

8. A strict application of the Code would result in the following major changes in the taxonomy of rudists: (1) the inclusion in *Praeradiolites* of the species having similar characters to *P. fleuriauxus* (all those currently ascribed to *Eoradiolites*, 51 species in Steuber’s (2002) catalogue); (2) the exclusion from *Praeradiolites* of the other species (all those currently ascribed to *Praeradiolites*, 77 species in Steuber’s (2002) catalogue); (3) the consideration of *Eoradiolites* as a junior synonym of *Praeradiolites*; and (4) the proposal of a new generic name for all those species currently ascribed to *Praeradiolites*. All the above would seriously undermine stability. The Commission’s action is requested in the view of the forthcoming revised edition of the Bivalvia volume of the ‘*Treatise on Invertebrate Paleontology*’, which will include a volume on rudists. It is desirable that this nomenclatural problem should be resolved before publication of the *Treatise*. The *Treatise* is the major reference book for invertebrate palaeontology systematics (at generic and supra-generic level) used by most palaeontologists worldwide.

9. Considering the above we propose that the Commission use its plenary power to set aside all previous type fixations for the genus *Praeradiolites* Douvillé, 1903 and designate *Sphaerulites ponsiana* d’Archiac, 1835 as the type species.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the genus *Praeradiolites* Douvillé, 1903 and designate *Sphaerulites ponsiana* d’Archiac, 1837 as the type species;
- (2) to emend the entry on the Official List of Generic Names in Zoology for the name *Praeradiolites* Douvillé, 1903 (gender: masculine), to record that its type species is *Sphaerulites ponsiana* d’Archiac, 1837, and not *Radiolites fleuriauxus* d’Orbigny, 1842 as ruled in (1) above and that its correct publication date is 1903 and not 1902;
- (3) to place on the Official List of Specific Names in Zoology the name *ponsiana* d’Archiac, 1837, as published in the binomen *Sphaerulites ponsiana* (specific name of the type species of *Praeradiolites* Douvillé, 1903, as ruled in (1) above);
- (4) to emend the entry on the Official List of Specific Names in Zoology for the name *fleuriauxus* d’Orbigny, 1842, as published in the binomen *Radiolites fleuriauxa* to record that it is not the type species of *Praeradiolites* Douvillé, 1903, as ruled in (1) above, and that its correct original spelling is *fleuriauxus* and not *fleuriauxi*.

References

- Archiac, E.J.A.d'. 1837. Mémoire sur la formation crétacée du S-O de la France. *Mémoires de la Société Géologique de France*, **2**(7): 157–192.
- Douvillé, H. 1903. Classification des Radiolites. *Bulletin de la Société Géologique de France*, (4)**2**: 461–477.
- Douvillé, H. 1909. Sur le genre *Eoradiolites* nov. *Comptes Rendus des Séances de la Société Géologique de France*, (4)**9**: 77.
- Douvillé, H. 1910. Études sur les rudistes. Rudistes de Sicile, d'Algérie, d'Égypte, du Liban et de la Perse. *Mémoires de la Société Géologique de France. Paléontologie*, **18** (Mémoire no. 41): 1–84.
- Kühn, O. 1932. *Fossilium Catalogus. I: Animalia. Pars 54: Rudistae*, 200 pp. W. Junk, Berlin.
- Macé-Bordy, J. 2007. Révision des rudistes crétacés (Bivalvia) de la *Paléontologie française* d'Alcide d'Orbigny. Deuxième partie. *Annales de Paléontologie*, **93**: 67–105.
- Neave, S.A. 1940. *Nomenclator zoologicus. A list of the names of genera and subgenera in zoology from the tenth edition of Linnaeus 1758 to the end of 1935*, vol. 3. M-P. Pp. [1–2], 1–1065. Zoological Society, London.
- Orbigny, A.d'. 1842. Quelques considérations zoologiques et géologiques sur les Rudistes. *Annales de Sciences Naturelles*, (2)**17**: 173–192.
- Pons, J.M., Vicens, E., Chikhi-Aouimeur, F. & Abdallah, H. 2010. Albian *Eoradiolites* (Bivalvia: Radiolitidae) from Jabal Naïmia, Gafsa Region, Tunisia, with revisional studies on the Albian forms of the genus. *Journal of Paleontology*, **84**: 321–331.
- Pons, J.M., Vicens, E., Chikhi-Aouimeur, F. & Abdallah, H. (in press). Taxonomical and biostratigraphical significance of the North African radiolitid rudist bivalve *Praeradiolites biskraensis* (Coquand, 1880). *Palaeontology*.
- Pons, J.M., Vicens, E. & Tarlao, A. 2011. Cenomanian radiolitid bivalves from Malchina, Karst of Trieste, Italy. *Cretaceous Research*, doi:10.1016/j.cretres.2011.03.009 (online pre-publication).
- Steuber, T. 2002. A palaeontological database of rudist bivalves. Taxonomic Database. (<http://www.paleotax.de/rudists/index.htm>) (Accessed 17 May 2011).
- Toucas, A. 1907–09. Études sur la classification et l'évolution des Radiolitidés. *Mémoires de la Société Géologique de France. Paléontologie*, Mémoire n° 36. Première partie: *Agria* et *Praeradiolites* (1907), **14**: 1–46, pls. 1–8. Deuxième partie: *Sphaerulites* et *Radiolites* (1908), **16**: 47–78, pls. 9–15. Troisième partie; *Sauvagesia* et *Biradiolites* (1909), **17**: 79–132, pls. 16–26.

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Case 3547***Cryptotermes dudleyi* Banks, 1918 (Insecta, Isoptera): proposed precedence over *Calotermes havilandi parasita* Wasmann, 1910 (currently *Cryptotermes parasita*)**

Kumar Krishna

Division of Invertebrate Zoology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024–5192, U.S.A. (e-mail: krishn@amnh.org)

Michael S. Engel

Division of Entomology, Natural History Museum, and Department of Ecology & Evolutionary Biology, 1501 Crestline Drive – Suite 140, University of Kansas, Lawrence, Kansas 66049–2811, U.S.A.; and Division of Invertebrate Zoology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024–5192, U.S.A. (e-mail: msengel@ku.edu)

Abstract. The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the usage of the specific name *Cryptotermes dudleyi* Banks, 1918 for an important economic termite pest species introduced throughout much of the world by man. The senior name, *Calotermes havilandi parasita* Wasmann, 1910 (currently *Cryptotermes parasita*), is poorly known, not widely used, and applied only to a population of restricted distribution, while the junior name has been universally used in an extensive systematic, biological, and pest management literature since 1918 when it was first proposed. It is accordingly proposed that the specific name *dudleyi* be given precedence over *parasita* whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Isoptera; KALOTERMITIDAE; *Cryptotermes*; *Cryptotermes dudleyi*; *Cryptotermes parasita*; termites; worldwide.

1. Wasmann (1910, p. 120) described *Calotermes havilandi parasita* from Mauritius and Europa Island, without selecting a holotype. Subsequently, Holmgren (1911a, p. 55) transferred *Calotermes havilandi parasita* to the subgenus *Cryptotermes* (today treated as a separate genus) and elevated the subspecies to specific rank, as *Calotermes* (*Cryptotermes*) *parasita*.

2. Banks (1918, p. 660) described and illustrated the drywood termite *Cryptotermes dudleyi* from Panama in his faunal account of the Isoptera of British Guiana and Panama.

3. Bacchus (1987, p. 53) selected a lectotype for *parasita* from Wasmann's syntypes from Mauritius and declared *parasita* a synonym of *Cryptotermes dudleyi*. He, however, retained *dudleyi* as the valid name despite *parasita* having priority. The type series of *C. havilandi parasita* Wasmann included syntypes from Mauritius and

Europa. It was found to be mixed. The syntypes from Europa Island, which are now paralectotypes with no name-bearing status, belong to *Cryptotermes havilandi* Sjöstedt, 1900 (Chhotani, 1970, p. 43; Bacchus, 1987, p. 1). A syntype from Mauritius was selected by Bacchus (1987, p. 53) as the lectotype of *parasita*, which that author then declared to be a junior synonym of *Cryptotermes dudleyi* Banks, 1918, without realising that *parasita* Wasmann 1910 has priority over *dudleyi* Banks, 1918.

4. Engel & Krishna (2002, p. 90) petitioned to conserve *dudleyi* relative to another senior synonym, *Calotermes* (*Cryptotermes*) *jacobsoni* Holmgren, 1913. The conservation of *dudleyi* relative to *jacobsoni* was upheld by the Commission and both names placed on the Official List of Specific Names in Zoology (Opinion 2064, BZN 61(1): 57–58, March 2004)). These authors overlooked at that time the similar priority of *parasita* over *dudleyi*.

5. *Cryptotermes dudleyi* Banks has a wide distribution and is a significant pest species, introduced into all the geographical regions of the world (Oriental, Ethiopian, Palaearctic, Nearctic, Neotropical, Australian and Pacific Oceanic Islands). The name *dudleyi* has been widely used in biological, systematic, and pest control literature. Since 1918 it has appeared in more than 100 biological and systematic papers and in a voluminous literature on pest control (e.g. Harris, 1961; Gay, 1967; Araujo, 1970; Roonwal, 1970; Sen Sarma 1974; Sen Sarma et al., 1975; Gay & Watson, 1982; Steward, 1983a, 1983b; Thakur, 1984; Roonwal & Chhotani, 1989; Huang et al., 1989, 2000; Watson et al., 1998; Scheffrahn & Křeček, 1999; Bordereau et al., 1999; Constantino, 2002; Fontes & Milano, 2002; Milano & Fontes, 2002). Conversely, the name *parasita* has been associated with only a restricted distribution (Comoros, Mauritius and Madagascar) and has been used only nine times in the same period, generally in checklists and catalogues (Holmgren, 1911a, 1911b; Hegh, 1922; Sjöstedt, 1926; Snyder, 1949; Van Boven, 1969; Chhotani, 1970; Bacchus, 1987; Eggleton & Davies, 2003), not in any revisionary or biological studies.

6. To replace the name *dudleyi*, which has been and is now universally used in the literature and widely recognised, with the obscure name *parasita* would, to say the least, create confusion and nomenclatural instability, particularly for the vast biological control and pest management community. We therefore propose that the name *C. dudleyi* be given precedence over *C. parasita*, with *parasita* remaining available for any future investigators who may wish to resurrect the epithet. In accordance with Article 23.9.3 of the Code this case is referred to the Commission for a ruling under Article 81.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, precedence over the name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, with the endorsement that it is not to be given priority over the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, whenever the two are considered to be synonyms;

- (3) to amend the entry on the Official List of Specific Names in Zoology for the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, to record that it is to be given precedence over the name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, whenever the two are considered to be synonyms.

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References

- Araujo, R.L. 1970. Termites of the Neotropical region. Pp. 527–576 in Krishna, K. & Weesner, F.M. (Eds.), *Biology of Termites [Volume 2]*. Academic Press, New York.
- Bacchus, S. 1987. A taxonomic and biometric study of the genus *Cryptotermes* (Isoptera: Kalotermitidae). *Tropical Pest Bulletin*, **7**: [iv], 1–91.
- Banks, N. 1918. The termites of Panama and British Guiana. *Bulletin of the American Museum of Natural History*, **38**(17): 659–667, pl. 1.
- Bordereau, C., Peppuy, A., Connétable, S. & Robert, A. 1999. Les termites de l'île de la Réunion et leur importance économique. *Actes des Colloques Insectes Sociaux*, **12**: 159–164.
- Chhotani, O.B. 1970. Taxonomy, zoogeography and phylogeny of the genus *Cryptotermes* (Isoptera: Kalotermitidae) from the Oriental region. *Memoirs of the Zoological Survey of India*, **15**(1): i, 1–81.
- Constantino, R. 2002. The pest termites of South America: Taxonomy, distribution and status. *Journal of Applied Entomology*, **126**: 355–365.
- Eggleton, P. & Davies, R. 2003. Isoptera, termites. Pp. 654–660 in Goodman, S.M. & Benstead, J.P. (Eds.), *The Natural History of Madagascar*. University of Chicago Press. Chicago.
- Engel, M.S. & Krishna, K. 2002. Case 3181. *Cryptotermes dudleyi* Banks, 1918 (Insecta, Isoptera): Proposed precedence over *Calotermes* (*Cryptotermes*) *jacobsoni* Holmgren, 1913. *Bulletin of Zoological Nomenclature*, **59**(2): 90–92.
- Evans, T.A. 2010. Invasive termites. Pp. 519–562 in Bignell, D.A., Roisin, Y. & Lo, N. (Eds.), *Biology of Termites: A Modern Synthesis*. Springer, Dordrecht.
- Fontes, L.R. & Milano, S. 2002. Termites as an urban problem in South America. *Sociobiology*, **40**(1): 103–151.
- Gay, F.J. 1967. A world review of introduced species of termites. *Commonwealth Scientific and Industrial Research Organization Bulletin*, **286**: 1–88.
- Gay, F.J. & Watson, J.A.L. 1982. The genus *Cryptotermes* in Australia (Isoptera: Kalotermitidae). *Australian Journal of Zoology, Supplement*, **88**: 1–64.
- Harris, W.V. 1961. *Termites: Their Recognition and Control*. xii, 187 pp. Longmans, Green & Co., London.
- Holmgren, N. 1911a. Termitenstudien. 2. Systematik der Termiten. Die Familien Mastotermitidae, Protermitidae und Mesotermitidae. *Kungliga Svenska Vetenskaps-Akademiens Handlingar*, **46**(6): 1–86, 6 pls.
- Holmgren, N. 1911b. Bemerkungen über einige Termiten-Arten. *Zoologischen Anzeiger*, **37**(26): 545–553.
- Holmgren, N. 1913. Termitenstudien. 4. Versuch einer systematischen Monographie der Termiten der orientalischen Region. *Kungliga Svenska Vetenskaps-Akademiens Handlingar*, **50**(2): 1–276, 8 pls.
- Huang, F.-S., Li, G.-X. & Zhu, S.-M. 1989. *The Taxonomy and Biology of Chinese Termites – Isoptera*. 2, 2, 605 pp. Tianze Press. Guangzhou.
- Huang, F., Zhu, S., Ping, X., He, X., Li, G. & Gao, D. 2000. *Fauna Sinica [Volume 17], Insecta: Isoptera*. xxiv, 961 pp. Science Press, Beijing.
- Milano, S. & Fontes, L.R. 2002. *Cupim e Cidade: Implicações Ecológicas e Controle*. 141 pp. Conquista Artes Gráficas, São Paulo.

- Roonwal, M.L. 1970. Termites of the Oriental region. Pp. 315–391 in Krishna, K. & Weesner, F.M. (Eds.), *Biology of Termites [Volume 2]*. Academic Press, New York.
- Roonwal, M.L. & Chhotani, O.B. 1989. *The Fauna of India and Adjacent Countries. Isoptera (Termites). (Introduction and Families Termopsidae, Hodotermitidae, Kalotermitidae, Rhinotermitidae, Stylotermitidae and Indotermitidae) [Volume 1]*. [8], viii, 672 pp. Zoological Survey of India, Calcutta.
- Scheffrahn, R.H. & Křeček, J. 1999. Termites of the genus *Cryptotermes* Banks (Isoptera: Kalotermitidae) from the West Indies. *Insecta Mundi*, **13**(3–4): 111–171.
- Sen Sarma, P.K. 1974. Ecology and biogeography of the termites of India. Pp. 421–472 in Mani, M.S. (Ed.), *Ecology and Biogeography in India*. W. Junk, The Hague.
- Sen Sarma, P.K., Thakur, M.L., Misra, S.C. & Gupta, B.K. 1975. *Studies on Wood Destroying Termites of India (Final Technical Report 1968–73) under PL 480 Project A7-FS-58*. viii, 187, [2] pp. Forest Research Institute & Colleges. Dehra Dun.
- Sjöstedt, Y. 1900. Monographie der Termiten Afrikas. *Kungliga Svenska Vetenskaps-Akademiens Handlingar*, **34**(4): 1–236.
- Sjöstedt, Y. 1926. Revision der Termiten Afrikas. 3. Monographie. *Kungliga Svenska Vetenskaps-Akademiens Handlingar, Tredje Serien* **3**(1): 1–419, 16 pls.
- Snyder, T.E. 1949. Catalog of termites (Isoptera) of the world. *Smithsonian Miscellaneous Collections*, **112**(3953): 1–490.
- Steward, R.C. 1983a. Microclimate and colony foundation by imago and neotenic reproductives of dry-wood termite species (*Cryptotermes* sp.) (Isoptera: Kalotermitidae). *Sociobiology*, **7**(3): 311–331.
- Steward, R.C. 1983b. The effects of humidity, temperature and acclimation on the feeding, water balance and reproduction of dry-wood termites (*Cryptotermes*). *Entomologia Experimentalis et Applicata*, **33**: 135–144.
- Thakur, M.L. 1984. Further records of occurrence and incidence of damage by termites of the genus *Cryptotermes* Banks in India (Isoptera: Kalotermitidae). *Journal of the Bombay Natural History Society*, **81**(2): 497–500.
- Van Boven, J.K.A. 1969. The termite types of the Wasmann Collection in the Natuurhistorisch Museum of Maastricht. *Publicatiës van het Natuurhistorisch Genootschap in Limburg*, **19**(1–2): 37–61.
- Wasmann, E. 1910. Termiten von Madagaskar, den Comoren und Inseln Ostafrikas. Pp. 115–127 in Voeltzkow, A. (Ed.), *Reise in Oskafrika in den Jahren 1903–1905: Mit Mitteln der Hermann und Elise geb. Heckmann Wentzel-Stiftung Ausgeführt. Wissenschaftliche Ergebnisse. Band III. Systematische Arbeiten. Heft II*. E. Schweizerbart'sche Verlag, Stuttgart.
- Watson, J.A.L., Miller, L.R. & Abbey, H.M. 1998. Isoptera. Pp. 163–250 in Houston, W.W.K. & Wells, A. (Eds.), *Zoological Catalogue of Australia [Volume 23]: Archaeognatha, Zygentoma, Blattodea, Isoptera, Mantodea, Dermaptera, Phasmatodea, Embioptera, Zoraptera*. CSIRO Publishing, Melbourne.

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Case 3538

CORYNINAE Benson, 1938 (Insecta, Hymenoptera, Cimbicidae): proposed emendation of spelling to CORYNIDINAE to remove homonymy with CORYNIDAE Johnston, 1836 (Cnidaria, Anthoathecata)

Stephan M. Blank

*Senckenberg Deutsches Entomologisches Institut, Eberswalder Str. 90,
15374 Müncheberg, Germany* (e-mail: Stephan.Blank@senckenberg.de)

Mattias Forshage

*Entomology Department, Swedish Museum of Natural History, Box 50007,
104 05 Stockholm, Sweden* (e-mail: Mattias.Forshage@nrm.se)

Abstract. The purpose of this application, under Articles 29 and 55.3.1 of the Code, is to remove the homonymy between two family-group names, CORYNINAE of Hymenoptera (Insecta) and CORYNIDAE of Anthoathecata (Cnidaria). It is proposed to adopt the Greek genitive form *Corynid-* of the sawfly genus *Corynis* Thunberg, 1789 as the stem of the corresponding family-group name, giving CORYNIDINAE Benson, 1938. CORYNIDAE Johnston, 1836, a name for hydrozoans, would remain unchanged.

Keywords. Nomenclature; taxonomy; Anthoathecata; Hymenoptera; Cimbicidae; CORYNIDAE; CORYNIDINAE; *Coryne*; *Corynis*; sawflies; hydrozoans; Palearctic.

1. Johnston (1836, p. 107) proposed the family-group name CORYNIDAE to accommodate a genus of hydrozoans (Cnidaria). The name is based on the extant genus *Coryne* Gaertner in Pallas, 1774 (pp. 40–41) established for *C. pusilla* Gaertner in Pallas, 1774 (pp. 40–41), which is the type species by monotypy. The journal volume including the original publication of Johnston bears the imprinted date 1834 but it was corrected to 1836 by Cornelius (1982, p. 133). Currently, CORYNIDAE is applied as the valid name of a family of Hydrozoa (e.g. Bouillon & Boero, 2000; Bouillon et al., 2006; Daly et al., 2007; Schuchert, 2001, 2010).

2. Benson (1938, p. 371) proposed the family-group name CORYNINAE, based on the extant genus of sawflies (Insecta, Hymenoptera, ‘Symphyta’) *Corynis* Thunberg, 1789 (p. 13 and footnote h), which originally included the species ‘*Tenthredinem luteam, obscuram, & hisce similes*’. These species correspond with *Tenthredo lutea* Linnaeus, 1758 (p. 555), currently classified as *Cimbex luteus* (Linnaeus, 1758) (see Taeger et al., 2010, p. 190), and *Tenthredo obscura* Fabricius, 1775 (p. 319), currently classified as *Corynis obscura* (Fabricius, 1775) (see Taeger et al. 2010, p. 199). Morice & Durrant (1915, p. 372) selected *Tenthredo obscura* Fabricius, 1775 as the type species of *Corynis*, erroneously referring to ‘*obscura* L[innaeus]’. Currently, CORYNINAE is in use for a subfamily of the sawfly family Cimbicidae Thomson, 1871 (e.g. Lorenz & Kraus, 1957; Benson, 1968; Abe & Smith, 1991; Ermolenko, 1972, 2001; Taeger & Blank, 1998; Taeger et al., 2010). CORYNINAE includes a single genus, *Corynis* Thunberg,

1789, which comprises 28 mostly West Palaearctic species (Benson, 1968; Taeger et al., 2010). In a forthcoming revision, a number of additional species will be described (H.-J. Jacobs et al., pers. comm.).

3. Thunberg's (1789, p. 13 and footnote h) brief original description of *Corynis* does not include an explicit etymology. The name is certainly based on the Greek noun *κορύνη* (club), because Thunberg's short Latin diagnosis 'Antennæ capitatae' refers to the clavate shape of the antennae, which is characteristic of *Corynis* as well as of other CIMBICIDAE. The Greek noun was correctly transliterated by Thunberg (1789) for *Corynis* and by Gaertner in Pallas, 1774 (pp. 40–41) for *Coryne*. The ending *-is* given by Thunberg for *Corynis* may have two explanations, which are both equally plausible: (1) it is a modification to fit into the 3rd Latin declension. In this case the stem is *Coryn-* and it conflicts with CORYNIDAE Johnston, 1836 as stated above; (2) it is a Greek suffix *-is* (genitive *-idos*) to indicate 'user of' or 'bearer of', as in the Greek noun *pharmakis* (sorcerer), which is derived from the Greek noun *pharmakon* (potion). In this case the stem would be CORYNID-, giving CORYNIDINAE for the subfamily name in CIMBICIDAE, which would not conflict with CORYNIDAE Johnston, 1836.

4. Gussakovskij (1947, pp. 14, 115, 178, 215) proposed the family-group name AMASINI, based on the extant genus of sawflies *Amasis* Leach, 1817 (pp. 102, 114). In the original description of *Amasis*, both *Tenthredo obscura* Fabricius, 1775 (p. 319) and *Tenthredo laeta* Fabricius, 1798 (p. 214) were included. Westwood (1839, p. 52) designated *Tenthredo obscura* Fabricius, 1775 as the type species. *Amasis* Leach, 1817 is a junior objective synonym of *Corynis* Thunberg, 1789 due to identical type species (Morice & Durrant, 1915, p. 372). Ermolenko (1972, p. 167) was the first to associate the family-group names AMASINI Gussakovskij, 1947 and CORYNINAE Benson, 1938, applying CORYNINAE as the valid name for the subfamily of CIMBICIDAE. Subsequent to Gussakovskij (1947), AMASINI has been used as a valid name only once by Cinovskij (1953, pp. 27, 57).

5. Since the revision of *Corynis* by Benson (1968), most authors have applied *Corynis* as the valid name for a particular sawfly genus associated with CIMBICIDAE. *Amasis* Leach, 1817 is the only available, junior synonym of *Corynis* Thunberg, 1789 (Blank et al., 2009, Taeger et al., 2010). Two lists which demonstrate the frequent use after 1968 of *Corynis* (a selection of 50 references) against the rare use of *Amasis* (a total of only seven publications found) have been forwarded to the Commission Secretariat.

6. Both the family-group names CORYNIDAE Johnston, 1836 (Cnidaria) and CORYNINAE Benson, 1938 (Insecta) are correctly formed and are in general use. Raising AMASINI Gussakovskij, 1947 to subfamily rank and replacing CORYNINAE Benson, 1938 would cause considerable confusion, because since Benson's (1968) revision, *Corynis* Thunberg, 1789 has almost consistently been used as the valid name of the only included genus, whereas *Amasis* Leach, 1817 has been used as valid only rarely and possibly only inadvertently (e.g. in the original description of *Amasis valkanovi* Vasilev, 1969, pp. 695–696, a junior subjective synonym of *Corynis obscura* (Fabricius, 1775) according to Taeger et al. (2010, p. 199)). To remove the homonymy, it is therefore proposed, in accordance with Article 29.1 of the Code, to presume that the *-is* in *Corynis* is the Greek suffix of which the genitive would be *-idos* as explained in para. 4 above, so that the hymenopteran family-group name based on it would become CORYNIDINAE. As required by Article 55.3.1 of the Code this case is referred to the Commission.

7. The International Commission on Zoological Nomenclature is accordingly asked:
- (1) to use its plenary power to rule that for the purposes of Article 29 the stem of the generic name *Corynis* Thunberg, 1789 is *Corynid*-;
 - (2) to place the following names on the Official List of Generic Names in Zoology:
 - (a) *Corynis* Thunberg, 1789 (gender: feminine), type species *Tenthredo obscura* Fabricius, 1775 by subsequent designation by Morice & Durrant (1915);
 - (b) *Coryne* Gaertner in Pallas, 1774 (gender: feminine), type species by monotypy *Coryne pusilla* Gaertner in Pallas, 1774;
 - (3) to place the following names on the Official List of Specific Names in Zoology:
 - (a) *obscura* Fabricius, 1775, as published in the binomen *Tenthredo obscura* (specific name of the type species of *Corynis* Thunberg, 1789);
 - (b) *pusilla* Gaertner in Pallas, 1774, as published in the binomen *Coryne pusilla* (specific name of the type species of *Coryne* Gaertner in Pallas, 1774);
 - (4) to place the following names on the Official List of Family-Group Names in Zoology:
 - (a) CORYNIDINAE Benson, 1938, type genus *Corynis* Thunberg, 1789 (spelling emended by the ruling in (1) above) (Insecta, Hymenoptera);
 - (b) CORYNIDAE Johnston, 1836, type genus *Coryne* Gaertner in Pallas, 1774 (Cnidaria, Anthoathecata);
 - (5) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name CORYNINAE Benson, 1938 (spelling emended to CORYNIDINAE in (1) above).

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References

- Abe, M. & Smith, D.R. 1991. The Genus-group Names of Symphyta (Hymenoptera) and Their Type Species. *Esakia*, **31**: 1–115.
- Benson, R.B. 1938. On the Classification of Sawflies (Hymenoptera Symphyta). *Transactions of the Royal Entomological Society of London*, **87**(15): 353–384.
- Benson, R.B. 1968. Hymenoptera from Turkey, Symphyta. *Bulletin of the British Museum (Natural History) Entomology series*, **22**(4): 111–207.
- Blank, S.M., Taeger, A., Liston, A.D., Smith, D.R., Rasnitsyn, A.P., Shinohara, A., Heidema, M. & Viitasaari, M. 2009. Studies toward a World Catalog of Symphyta (Hymenoptera). *Zootaxa*, **2254**: 1–96.
- Bouillon, J. & Boero, F. 2000. Synopsis of the families and genera of the Hydromedusae of the world, with a list of the worldwide species. *Thalassia Salentina*, **24**: 47–296.
- Bouillon, J., Gravili, C., Pagès, F., Gili, J.-M. & Boero, F. 2006. An introduction to Hydrozoa. *Mémoires du Muséum National d'Histoire Naturelle*, **194**: 1–591.
- Cinovskij, Ja.P. 1953. *Nasekomye Latvijskoj SSR. Rogohvosty i pilil'shchiki*. 209 pp. Izdatel'stvo Akademii Nauk Latvijskoj SSR, Riga.
- Cornelius, P.F.S. 1982. Hydroids and medusae of the family Campanulariidae recorded from the eastern North Atlantic, with a world synopsis of genera. *Bulletin of the British Museum (Natural History) Zoology series*, **42**(2): 37–148.
- Daly, M., Brugler, M.R., Cartwright, P., Collin, A.G., Dawson, M.N., Fautin, D.G., France, S.C., McFadden, C.S., Opresko, D.M., Rodriguez, E., Romano, S.L. & Stake, J.L. 2007.

- The phylum Cnidaria: A review of phylogenetic patterns and diversity 300 years after Linnaeus. *Zootaxa*, **1668**: 127–182.
- Ermolenko, V.M.** 1972. Rohoxvosty ta pyl'shhyky. Vypusk 2. Tentredopodibni pyl'shhyky. Cymbicydy. Blastykotomidy. In *Fauna Ukrayiny*, **10**(2): 1–203, Kyiv.
- Ermolenko, V.M.** 2001. Novyi dlya nauki vid pilil'shchikov roda *Corynis* (Hymenoptera, Cimbicidae) iz Armenii. [A New Sawfly Species of the Genus *Corynis* (Hymenoptera, Cimbicidae) from Armenia]. *Vestnik zoologii*, **35**(4): 73–76.
- Fabricius, J.C.** 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi et Lipsiae.
- Fabricius, J.C.** 1798. *Supplementum entomologiae systematicae*. 572 pp. Hafniae.
- Gussakovskij, V.V.** 1947: Insectes Hyménoptères, Chalastogastra (partie 2), vol. 2(2). Pp. 1–235 in Pavlovsky, E.N. & Stackelberg, A.A. (Eds.), *Faune de l'URSS*. Academie des Sciences de l'URSS, Moscow, Leningrad.
- Johnston, [G.]** 1836. A Catalogue of the Zoophytes of Berwickshire. *History of the Berwickshire Naturalists' Club*, **1**[1834]: 107–108.
- Leach, W.E.** 1817. *The Zoological Miscellany. Being Descriptions of New or Interesting Animals*, vol. 3. 151 pp. R. & A. Taylor, Shoe-Lane, London.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Lorenz, H. & Kraus, M.** 1957. Die Larvalsystematik der Blattwespen (Tenthredinoidea und Megalodontoidea). *Abhandlungen zur Larvalsystematik der Insekten*, **1**: 1–389.
- Morice, F.D. & Durrant, J.H.** 1915. The authorship and first publication of the Jurinean Genera of Hymenoptera: Being a reprint of a long-lost work by Panzer, with a translation into English, an Introduction, and Bibliographical and Critical notes. *Transactions of the Entomological Society of London*, [1914](3–4): 339–436.
- Pallas, P.S.** 1774. *Spicilegia zoologica. Quibus novae imprimis et obscurae animalium species iconibus, descriptionibus atque commentariis illustrantur*. Fasciculus x: 1–[42], index [1–10]. In Pallas, P.S. 1767–1780: *Spicilegia zoologica. Tomus I. Continens quadrupedum, avium, amphibiorum, piscium, insectorum, molluscorum aliorumque marinorum*. Gottl. August. Lange, Berolini.
- Schuchert, P.** 2001. Survey of the family Corynidae (Cnidaria, Hydrozoa). *Revue Suisse de Zoologie*, **108**(4): 739–878.
- Schuchert, P.** 2010. Corynidae in Schuchert, P. *World Hydrozoa database*. Accessed at <http://www.marinespecies.org/hydrozoa/aphia.php?p=taxdetails&id=1599> Accessed on 19 May 2011.
- Taeger, A. & Blank, S.M.** 1998. Systematische Übersicht. Pp. 337–338 in Taeger, A. & Blank, S.M. (Eds.), *Pflanzenwespen Deutschlands (Hymenoptera, Symphyta). Kommentierte Bestandsaufnahme*. Goecke & Evers, Keltern.
- Taeger, A., Blank, S.M. & Liston, A.D.** 2010. World Catalog of Symphyta (Hymenoptera). *Zootaxa*, **2580**: 1–1064.
- Thunberg, C.P.** 1789. *Periculum entomologicum, quo characteres generum Insectorum proponit etc. Dissert. Resp. S. Foerner*. Edman, Upsaliae, 16 pp.
- Vasilev, I.B.** 1969. Neue Blattwespenart *Amasis* Leach. (Cimbicidae, Hymenoptera) aus Bulgarien. *Doklady Bolgarskoi Akademii Nauk*, **22**(6): 695–696.
- Westwood, J.O.** 1839. Synopsis of the Genera of British Insects. Pp. 49–80 in Westwood, J.O. 1838–1840: *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families*. Longman, Orme, Brown, Green & Longmans, London.

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Case 3544***Apis armbrusteri* Zeuner, 1931 (Insecta, Hymenoptera): proposed conservation by designation of a neotype**

Michael S. Engel

Division of Entomology, Natural History Museum, and Department of Ecology & Evolutionary Biology, 1501 Crestline Drive – Suite 140, University of Kansas, Lawrence, Kansas 66049–2811, U.S.A.
(e-mail: msengel@ku.edu)

Ulrich Kotthoff

Geologisch-Paläontologisches Institut, Universität Hamburg, Bundesstraße 55, D-20146 Hamburg, Germany (e-mail: fgiv005@uni-hamburg.de)

Torsten Wappler

Steinmann-Institut für Geologie, Mineralogie und Paläontologie, Universität Bonn, Nußallee 8, D-53115 Bonn, Germany (e-mail: twappler@uni-bonn.de)

Abstract. The purpose of this application, under Article 75.5 of the Code, is to conserve the name *Apis armbrusteri* Zeuner, 1931 for a species of fossil honey bee occurring in the Miocene fauna of southwestern Germany. The holotype is the hollow impression of a bee from the Early Miocene Böttingen Marmor and, aside from attributing the taxon to the tribe APINI, no details regarding its specific identity can be gleaned from this specimen. Nonetheless, this name has been universally applied to the Early Miocene honey bees from Böttingen Marmor and the related contemporaneous site from the same crater series, Randeck Maar, since Zeuner & Manning (1976). Although *A. armbrusteri* is recognised as a nomen dubium, to resurrect the unused specific epithet *Apis scheuthlei* (Armbruster, 1938) for these bees would be counter to current usage and would destabilise a voluminous literature on honey bee evolution and ecology. It would also threaten the subgeneric name *Cascapis* Engel, 1999 as *A. armbrusteri* sensu Zeuner & Manning (1976), i.e. based on the Randeck Maar material, is its type species by original designation. Accordingly, it is proposed that the unidentifiable holotype be set aside and one of the more exquisitely preserved and easily diagnosable specimens from this same fauna be designated as neotype, thereby stabilising the honey bee taxonomy and bringing the application of the name *A. armbrusteri* in line with universal current usage.

Keywords. Nomenclature; taxonomy; Hymenoptera; APIDAE; *Apis*; *Apis armbrusteri*; *Cascapis*; *Hauffapis*; apiculture; fossil honey bees; Miocene.

1. Zeuner (1931, p. 292) proposed the name *Apis armbrusteri* for a new fossil honey bee species based on the hollow remains of several workers on a thermal limestone

slab from the Early Miocene of Böttingen Marmor (Swabian Alb, Württemberg, southwestern Germany). The casts do not preserve any species-specific details of honey bees. Zeuner (p. 297) designated the third cast on the block as the holotype.

2. Armbruster (1938, p. 37) described a new genus, *Hauffapis* with three included species, *Hauffapis scheuthlei*, *H. scheeri* and *H. scharmanni* (pp. 43–44), for a group of exceptionally well preserved early honey bees from the Early Miocene of Randeck Maar (Swabian Alb, Württemberg, southwestern Germany), a deposit that is part of the same crater series as that of Böttingen Marmor but of considerably different taphonomy and preservation. The genus-group name *Hauffapis* is unavailable as no type species was originally (or has subsequently been) selected (Article 13.3 of the Code; Michener, 1990, 1997; Engel, 1999).

3. Zeuner & Manning (1976, pp. 244–248), in a monographic study of the fossil bees of the world published posthumously from accumulated notes, considered *Apis armbrusteri* and the three ‘*Hauffapis*’ species to be conspecific and united them all under the former name, retaining Armbruster’s epithets as subspecific entities for minor variations in wing venation.

4. Engel (1999, p. 187), in a taxonomic overview of living and fossil honey bees, proposed the subgeneric name *Cascapis*, to use in place of *Hauffapis* Armbruster, 1938, describing the subgenus on the basis of the well preserved Randeck Maar honey bees, then all considered as *Apis armbrusteri* Zeuner, 1931, following Zeuner & Manning (1976). *Apis armbrusteri* Zeuner, 1931 is the type species of *Cascapis* by original designation.

5. Since Zeuner & Manning’s (1976) monograph, the name *Apis armbrusteri* Zeuner, 1931 has been universally employed as the name for the Miocene species of honey bee from the Böttingen Marmor-Randeck Maar fauna. Indeed, it had already been the standard usage for many years prior to their monograph. The name has appeared in countless works on honey bee systematics and evolution, and in the voluminous apicultural literature (e.g. Statz, 1934, 1944; Roussy, 1937; Kelner-Pillault, 1969a, 1969b; Burnham, 1978; Culliney, 1983; Seeley, 1985; Ruttner 1988, 1992; Ruttner et al., 1986; Zhang, 1990; Michener, 1990, 1997, 2007; Hong & Miao, 1992; Petrov, 1992; Lutz, 1993; Engel, 1998, 1999, 2000, 2001, 2002, 2006; Engel et al., 2009; Kotthoff, 2005; Oldroyd & Wongsiri, 2006; Tan et al., 2008).

6. In addition, the genus-group name *Cascapis* Engel, 1999 would also be threatened as *A. armbrusteri* Zeuner, 1931 is its type species by original designation, although the diagnosis is based on the more completely preserved Randeck Maar material under the synonymic names, *H. scheuthlei*, *H. scheeri* and *H. scharmanni*.

7. The incompleteness of the holotype leaves the identity of *Apis armbrusteri* entirely ambiguous, even at the generic level. Reverting to one of Armbruster’s (1938) long unused epithets would be counter to nomenclatural stability and universal usage. Presently involved in a review of the Miocene diversity of honey bees, we propose the stabilisation of *Apis armbrusteri* Zeuner by replacement of the unidentifiable name-bearing type by a neotype in accordance with Article 75.5. We therefore propose that an exceptionally well preserved specimen from Randeck Maar (Staatliches Museum für Naturkunde, SMNS 64675, Fig. 1) should be designated as neotype.

8. The International Commission on Zoological Nomenclature is accordingly asked:



Fig. 1. Proposed neotype of *Apis armbrusteri* Zeuner, 1931 (Staatliches Museum für Naturkunde, SMNS 64675). Scale bar = 2 mm.

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *Apis armbrusteri* Zeuner, 1931 and to designate as neotype a specimen from the same geological horizon at Randeck Maar (SMNS 64675 in the Staatliches Museum für Naturkunde, Stuttgart);
- (2) to place on the Official List of Generic Names in Zoology the name *Cascapis* Engel, 1999 (gender: feminine), type species by original designation *Apis armbrusteri* Zeuner, 1931;
- (3) to place on the Official List of Specific Names in Zoology the name *armbrusteri* Zeuner, 1931, as published in the binomen *Apis armbrusteri* and as defined by the neotype designated in (1) above (specific name of the type species of *Cascapis* Engel, 1999).

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References

- Armbruster, L.** 1938. Versteinerte Honigbienen aus dem obermiocänen Randecker Maar. *Archiv für Bienenkunde*, **19**: 1–48.

- Burnham, L.** 1978. Survey of social insects in the fossil record. *Psyche*, **85**: 85–133.
- Culliney, T.W.** 1983. Origin and evolutionary history of the honeybees *Apis*. *Bee World*, **64**: 29–38.
- Engel, M.S.** 1998. Fossil honey bees and evolution in the genus *Apis* (Hymenoptera: Apidae). *Apidologie*, **29**: 265–281.
- Engel, M.S.** 1999. The taxonomy of Recent and fossil honey bees (Hymenoptera: Apidae; *Apis*). *Journal of Hymenoptera Research*, **8**: 165–196.
- Engel, M.S.** 2000. Fossils and phylogeny: A paleontological perspective on social bee evolution. Pp. 217–224 in Bitondi, M.M.G. & Hartfelder, K. (Eds.), *Anais do IV Encontro sobre Abelhas*. Universidade de São Paulo, Ribeirão Preto.
- Engel, M.S.** 2001. The honey bees of Thailand (Hymenoptera: Apidae). *Natural History Bulletin of the Siam Society*, **49**: 113–116.
- Engel, M.S.** 2002. The honey bees of India, Hymenoptera: Apidae. *Journal of the Bombay Natural History Society*, **99**: 3–7.
- Engel, M.S.** 2006. A giant honey bee from the middle Miocene of Japan (Hymenoptera: Apidae). *American Museum Novitates*, **3504**: 1–12.
- Engel, M.S., Hinojosa-Díaz, I.A. & Rasnitsyn, A.P.** 2009. A honey bee from the Miocene of Nevada and the biogeography of *Apis* (Hymenoptera: Apidae: Apini). *Proceedings of the California Academy of Sciences*, Series 4, **60**: 23–38.
- Hong, Y.-C. & Miao, S.-J.** 1992. Fossil bee [sic] and its origin with discussion on the origin of the angiosperm. *Memoirs of the Beijing Natural History Museum*, **51**: 1–19. [In Chinese, with English summary]
- Kelner-Pillault, S.** 1969a. Abeilles fossiles ancestres des apides sociaux. *Proceedings of the VI Congress of the IUSSI [International Union for the Study of Social Insects]*, Bern, **1969**: 85–93.
- Kelner-Pillault, S.** 1969b. Les abeilles fossiles. *Memoire della Società Entomologica Italiana*, **48**: 519–534.
- Kotthoff, U.** 2005. Über einige Hymenoptera (Insecta) aus dem Unter-Miozän des Randecker Maars (Schwäbische Alb, Südwestdeutschland). *Stuttgarter Beiträge zur Naturkunde, Serie B, Geologie und Paläontologie*, **355**: 1–25.
- Lutz, H.** 1993. *Eckfeldapis electrapoides* nov. gen. n. sp., eine “Honigbiene” aus dem Mittel-Eozän des “Eckfelder Maars” bei Manderscheid/Eifel, Deutschland (Hymenoptera: Apidae, Apinae). *Mainzer Naturwissenschaftliches Archiv*, **31**: 177–199.
- Michener, C.D.** 1990. Classification of the Apidae (Hymenoptera). *University of Kansas Science Bulletin*, **54**: 75–164.
- Michener, C.D.** 1997. Genus-group names of bees and supplemental family-group names. *Scientific Papers, Natural History Museum, University of Kansas*, **1**: 1–81.
- Michener, C.D.** 2007. *The Bees of the World* [2nd Edition]. xvi, [i], 953 pp. Johns Hopkins University Press, Baltimore.
- Oldroyd, B.P. & Wongsiri, S.** 2006. *Asian honey bees: Biology, conservation, and human interactions*. xv, [i], 340 pp. Harvard University Press, Cambridge.
- Petrov, P.** 1992. Distribution and phylogenesis of the bee genus *Apis* (Hymenoptera, Apidae). *Uspechi Sovremennoi Biologii, Moscow*, **112**: 359–372.
- Roussy, L.** 1937. Contributions a l'étude de l'abeille tertiaire, de ses parasites et de ses ennemis. *La Gazette Apicole, Montfavet*, **388**: 49–72.
- Ruttner, F.** 1988. *Biogeography and taxonomy of honeybees*. xii, 284 pp. Springer Verlag, Berlin.
- Ruttner, F.** 1992. *Naturgeschichte der Honigbienen*. 357 pp. Ehrenwirth, Munich.
- Ruttner, F., Wilson, E.C., Snelling, R., Vorwohl, G. & Kauhausen, D.** 1986. Die Evolution des Flügelgäders der Honigbienen. *Apidologie*, **17**: 348–350.
- Seeley, T.D.** 1985. *Honeybee ecology: A study of adaptation in social life*. x, 201 pp. Princeton University Press, Princeton.
- Statz, G.** 1934. Neue Beobachtungen über fossile Bienen aus dem Tertiär von Rott am Siebengebirge. *Archiv für Bienenkunde*, **15**: 1–10.
- Statz, G.** 1944. Honigbienen aus deutschen Braunkohlenwäldern. *Die Umschau*, **48**: 63–65.
- Tan, K., Fuchs, S. & Engel, M.S.** 2008. An adventitious distal abscissa in the forewing of honey bees (Hymenoptera: Apidae). *Apidologie*, **39**: 674–682.

- Zeuner, F.E.** 1931. Die Insektenfauna des Böttinger Marmors. *Fortschritte der Geologie und Palaeontologie*, **9**: 247–406.
- Zeuner, F.E. & Manning, F.J.** 1976. A monograph on fossil bees (Hymenoptera: Apoidea). *Bulletin of the British Museum (Natural History), Geology*, **27**: 149–268.
- Zhang, J.-F.** 1990. New fossil species of Apoidea (Insecta: Hymenoptera). *Acta Zootaxonomica Sinica*, **15**: 83–91.

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Case 3554***Anaphes* Haliday, 1833 (Insecta, Hymenoptera): proposed designation of *A. fuscipennis* Haliday, 1833 as the type species**

John T. Huber

Natural Resources Canada, Canadian Forest Service, K.W. Neatby Building, Ottawa, Ontario, Canada, K1A 0C6 (e-mail: john.huber@agr.gc.ca)

John S. Noyes

Department of Entomology, The Natural History Museum, London, SW7 5BD, U.K.

Andrew Polaszek

Department of Entomology, The Natural History Museum, London, SW7 5BD, U.K.

Serguei Triapitsyn

Department of Entomology, University of California, Riverside, CA, 92521, U.S.A.

Abstract. The purpose of this application, under Articles 80.9 and 81.1 of the Code, is to designate *Anaphes fuscipennis* Haliday, 1833 (family MYMARIDAE) as the type species of *Anaphes* Haliday, 1833. The nominal species *A. punctum* Shaw, 1798 is currently the type species by subsequent designation and is placed on the Official List of Specific Names in Zoology, but no type specimen of *A. punctum* existed until Huber (2011) showed conclusively that *punctum* belongs to the genus *Camptoptera* Foerster, 1856 and designated a neotype. It is clearly unacceptable that the type species of a genus does not belong to that genus so a request to the Commission to change the type species to the only other originally included species of *Anaphes*, *A. fuscipennis*, is presented, to maintain the current usage.

Keywords. Nomenclature; taxonomy; Insecta; Hymenoptera; MYMARIDAE; *Anaphes*; *Anaphes fuscipennis*; *Anaphes punctum*; biological control.

1. The genus *Anaphes* Haliday, 1833 (Insecta, Hymenoptera) currently includes about 230 nominal species of MYMARIDAE, several of which are used for biological control of other insects. As a result there is considerable basic and applied literature on the genus, much of it listed in Huber (1992, 2006).

2. Haliday (1833, p. 269) first defined *Anaphes* in a key but without included species. In a second part of the same paper, Haliday (1833, p. 346) established the generic name *Anaphes* and included two species: *Anaphes fuscipennis* Haliday, 1833 and *A. punctum* (Shaw, 1798), transferred (implicitly) from *Ichneumon*.

3. Westwood (1840, p. 78) listed *A. punctum* as a ‘typical’ (as explained on p. 1, footnote) species of *Anaphes*. Undoubtedly, Westwood was influenced by Haliday’s referral of *A. punctum* to *Anaphes*, but he chose *punctum* instead of *fuscipennis* as ‘typical’ probably because it was described earlier than *fuscipennis*, not because it represented an ordinary looking species of the genus. Westwood’s choice was accepted by many subsequent workers as a type species designation. The original material of *punctum* was apparently not seen by either Haliday or Westwood (Graham, 1982, p. 205) so its placement in *Anaphes* must have been based on the short, inadequate original description and, in particular, on Shaw’s illustration. No other worker had seen Shaw’s specimen either, except possibly A.H. Haworth (1767–1833), a contemporary of Shaw. Graham (1982, p. 206) mentioned having found a specimen labelled as *punctum* by Haworth and stated that it belonged to the genus *Camptoptera*. That specimen is lost (Huber, 2011).

4. Ashmead (1904, p. 363) selected *A. fuscipennis* Haliday as the type of *Anaphes* – this is the first unambiguous citation of a type species for *Anaphes*. If Ashmead was aware of Westwood’s choice of *punctum* as ‘typical’ of *Anaphes* he ignored it, justifiably so because neither Westwood nor Haliday provided any reason for assigning *punctum* to *Anaphes*.

5. Gahan & Fagan (1923, p. 12) noted both type species designations for *Anaphes* but did not select one in preference to the other.

6. Debauche (1948, p. 155) treated *A. fuscipennis* as the type species of *Anaphes*, with a footnote explaining why he chose this species, and then (Debauche, 1949, p. 6) argued forcefully for a change of type species but did not submit a petition to the Commission.

7. The choice of type species of *Anaphes* seemed to have been resolved when *punctum* was formally placed on the Official List of Specific Names in Zoology as the type species of *Anaphes* (Opinion 729, BZN 22(2): 82–83, May 1965), based on a petition by Doutt & Annecke (1963) that incorrectly stated (p. 134, 2c) that *punctum* was the type species of *Anaphes* by original designation. In fact, *punctum* was not cited as the type (or a typical) species until later (Westwood, 1840). Westwood’s referral to *punctum* being typical was almost certainly meant to be adjectival, i.e. a good representative of the genus, rather than nomenclatural, i.e. fixing a type species, a concept that was probably not thought of in 1840.

8. Hellén (1974, p. 23) continued to treat *A. fuscipennis* as type species and Huber (1992, p. 26) supported previous workers to have the type species of *Anaphes* changed to *A. fuscipennis*.

9. Although Graham (1982, p. 205) argued that *punctum* was a species of *Anaphes* he nevertheless intended to petition the Commission for a change of type species to *A. fuscipennis* because *punctum* could not be identified and no type material could be found. In his words (p. 206) ‘it is unsatisfactory to have as type-species of the genus a species that cannot be recognized’. Graham died in 1995 and never submitted a petition.

10. Huber (2011, pp. 50–55) presented conclusive evidence that *punctum* is a species of *Camptoptera* Foerster, 1856 not a species of *Anaphes*. He designated (p. 56) and illustrated (p. 52) a neotype for *Ichneumon punctum*, and transferred that species to *Camptoptera*, thus leaving only one originally included species, *A. fuscipennis*, in *Anaphes*. The type locality of the neotype is England, Hampshire, Romsey, Awbridge

(collected in September 1981 by C. Vardy). The neotype is on a card mount and is deposited in the Natural History Museum, London.

11. *Anaphes* is one of the most cited genera of MYMARIDAE because of the important use of some of its member species in biological control of weevils (CURCULIONIDAE) and leaf beetles (CHRYSEMELIDAE). Though most nominal species of *Anaphes* are difficult to recognise, even with recourse to type specimens, the proposed type species, *A. fuscipennis*, is one of the few that is readily identifiable. Graham (1982) designated a lectotype for it.

12. Westwood's type species designation of *A. punctum* for *Anaphes*, as confirmed by ICZN Opinion 729, has not been generally accepted by entomologists. Strict adherence to this designation would have important ramifications. *Anaphes* would become the senior synonym of *Camptoptera* and the over 80 nominal species of *Camptoptera* would have to be transferred to *Anaphes*, as new combinations. *Camptoptera* species are known to be egg parasitoids mainly of beetles, e.g. SCOLYTIDAE (Huber & Lin 2000). While there is almost no applied literature on species of *Camptoptera* the genus is the largest in a group of genera distantly related to *Anaphes* in the family group classification of MYMARIDAE proposed by Anneke and Doutt (1960). Under their classification, *Camptoptera* is in the tribe OOCOTONINI, subfamily ALAPTINAE, whereas *Anaphes* is in the tribe ANAPHINI, subfamily MYMARINAE. If the latter suddenly included *Camptoptera* species, renamed *Anaphes* if Opinion 729 is not overturned, this would cause considerable confusion for taxonomists. Concurrently, all the species currently included in *Anaphes* would have to be transferred to the next available, reliable synonym, i.e. *Patasson* Walker, 1846. *Patasson* was used as a subgenus of *Anaphes* from 1948 until the early 1990s (Huber 1992) and prior to that as a genus that was well known to biological control workers. It represents a distinct subgroup of species within *Anaphes*, treated informally for the past 20 years as the *crassicornis* group of species. If *Patasson* were now to be used for all species of *Anaphes* it would be very confusing for biological control workers who have successfully used certain species, either as *Patasson* or as *Anaphes* (*Patasson*), for biological control. *Panthus* Walker, 1846, discussed briefly by Kryger (1950, p. 81) and in detail by Graham (1982, p. 203), would not be suitable; the name has not been used by taxonomists for over 60 years. Considering the importance of some species of *Anaphes* in biological control, not only would nomenclatural stability be disrupted but the use of the new combinations in the applied literature would be disruptive to biological control workers.

13. To resolve the problem of having a type species that belongs to a different genus from *Anaphes* it is recommended that the type species of *Anaphes* [gender masculine, not neuter, as explained in Huber (1992, p. 33; 2006, p. 168)] be changed to *A. fuscipennis* Haliday, 1833, following the lead of Ashmead (1904). Use of the Commission's plenary power under Article 81.1 to effect this change would promote nomenclatural stability and universality in the names discussed above (and, importantly, their taxonomic concepts as well).

14. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside its previous designation (in Opinion 729) of type species for the nominal genus *Anaphes* Haliday, 1833 and to designate *Anaphes fuscipennis* Haliday, 1833 as the type species of the genus;

- (2) to place on the Official List of Specific Names in Zoology the name *fuscipennis* Haliday, 1833, as published in the binomen *Anaphes fuscipennis* (specific name of the type species of *Anaphes* Haliday, 1833 as designated in (1) above);
- (3) to amend the entry on the Official List of Generic Names in Zoology for the name *Anaphes* Haliday, 1833, to record that its gender is masculine and not feminine, and its type species is *Anaphes fuscipennis* Haliday, 1833, and not *Ichneumon punctum* Shaw, 1798 as designated in (1) above;
- (4) to amend the entry on the Official List of Specific Names in Zoology for the name *punctum* Shaw, 1798, as published in the binomen *Ichneumon punctum*, to record that it is not the name of the type species of *Anaphes* Haliday, 1833.

References

- Anneck, D.P. & Douth, R.L. 1961. The genera of the Mymaridae. Hymenoptera: Chalcidoidea. *Entomology Memoirs. Department of Agricultural Technical Services, Republic of South Africa*, **5**: 1–71.
- Ashmead, W.H. 1904. Classification of the chalcid flies of the superfamily Chalcidoidea, with descriptions of new species in the Carnegie Museum, collected in South America by Herbert H.H. Smith. *Memoirs of the Carnegie Museum*, **1**(4): 225–555.
- Debauche, H.R. 1948. Étude sur les Mymarommatidae et les Mymaridae de la Belgique (Hymenoptera Chalcidoidea). *Mémoires du Musée Royal d'Histoire Naturelle de Belgique*, **108**: 1–248, pls. 1–24.
- Debauche, H.R. 1949. Mymaridae (Hymenoptera Chalcidoidea). *Exploration du Parc National Albert, Mission G.F. de Witte (1933–35)*, **49**: 1105, pls. 1–13.
- Douth, R.L. & Annecke, D.P. 1963. *Mymar* Curtis, 1829 (Insecta, Hymenoptera): proposed designation of a type-species under the plenary powers. Z.N.(S.) 479. *Bulletin of Zoological Nomenclature*, **20**: 134–136.
- Haliday, A.H. 1833. Essay on the classification of the parasitic Hymenoptera of Britain, which correspond with the Ichneumonones minuti of Linnaeus. *Entomologist Magazine*, **1**: 259–276, 333–350.
- Gahan, A.B. & Fagan, M.M. 1923. The type species of the genera of Chalcidoidea or chalcid-flies. *Bulletin of the United States National Museum*, **124**: 1–173.
- Graham, M.W.R. de V. 1982. The Haliday collection of Mymaridae (Insecta, Hymenoptera, Chalcidoidea) with taxonomic notes on some material in other collections. *Proceedings of the Royal Irish Academy B*, **82**: 189–243.
- Hellén, W. 1974. Die Mymariden Finnlands (Hymenoptera: Chalcidoidea). *Fauna Fennica*, **25**: 1–31.
- Huber, J.T. 1992. The subgenera, species groups, and synonyms of *Anaphes* (Hymenoptera: Mymaridae) with a review of the described Nearctic species of the *fuscipennis* group of *Anaphes* s.s. and the described species of *Anaphes* (Yungaburra). *Proceedings of the Entomological Society of Ontario*, **123**: 23–110.
- Huber, J.T. 2005. The gender and derivation of genus-group names in Mymaridae and Mymarommatidae. *Acta Societatis Zoologicae Bohemicae*, **69**: 167–183.
- Huber, J.T. 2006 [2004]. Review of the described Nearctic species of the *crassicornis* group of *Anaphes* s.s. (Hymenoptera: Mymaridae). *Journal of the Entomological Society of Ontario*, **135**: 3–8.
- Huber, J.T. 2011. The identity and generic placement of *Ichneumon punctum* Shaw (Hymenoptera: Mymaridae), and designation of a neotype. *Journal of Hymenoptera Research*, **29**: 47–63.
- Huber, J.T. & Lin, N.-Q. 2000 (1999). World review of the *Camptoptera* group of genera (Hymenoptera: Mymaridae). *Proceedings of the Entomological Society of Ontario*, **130**: 21–65.
- Kryger, J.P. 1950. The European Mymaridae comprising the genera known up to c. 1930. *Entomologiske Meddelelser*, **26**: 1–97.

Shaw, G. 1798. Account, accompanied by a figure, of a minute *Ichneumon*. *Transactions of the Linnaean Society of London*, **4**: 189, pl.18, fig. 1.

Westwood, J.O. 1840. *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families*, vol. II, i–xi, 1–587, followed by *Synopsis of the genera of British insects*, pp. 1154, followed by *Addenda to the generic synopsis of British insects*, pp. 155–158. Longman, Orme, Brown, Green & Longmans, London.

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Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3536

***Stegosaurus* Marsh, 1877 (Dinosauria, Ornithischia): proposed replacement of the type species with *Stegosaurus stenops* Marsh, 1887**

Peter M. Galton

College of Naturopathic Medicine, University of Bridgeport, Bridgeport, CT, U.S.A. & Peabody Museum of Natural History, Yale University, New Haven, CT, U.S.A. (e-mail: pgalton@bridgeport.edu)

Abstract. The purpose of this application, under Article 81.1 of the Code, is to preserve stability in the taxonomy of stegosaurian dinosaurs by replacing *Stegosaurus armatus* Marsh, 1877, the unidentifiable type species of the ornithischian dinosaur genus *Stegosaurus* Marsh, 1877, with the very well represented nominal species *Stegosaurus stenops* Marsh, 1887, also from the Upper Jurassic Morrison Formation, U.S.A. This genus is the basis for Stegosauria Marsh, 1877, STEGOSAUROIDEA Marsh, 1880, STEGOSAURIDAE Marsh, 1880 and STEGOSAURINAE Marsh, 1880. Maidment et al. (2008) listed seven putative autapomorphic characters for *Stegosaurus* and five for the species *Stegosaurus armatus* in its current usage. However, the holotype of *S. armatus*, which consists of an articulated series of 18 incomplete vertebrae from the proximal half of the tail and a very large but incomplete dermal plate, shows none of these diagnostic characters and so *S. armatus* must be considered a nomen dubium. However, the holotype of *S. stenops* Marsh, 1887 shares all 12 autapomorphies with *S. armatus* in its current usage, being based on an almost complete skeleton (USNM 4934), most of it still in the rock preserving almost natural articulation, which would make *S. stenops* by far the best available species to replace *S. armatus* as type species of *Stegosaurus* Marsh, 1877.

Keywords. Nomenclature; taxonomy; Dinosauria; Ornithischia; Stegosauria; STEGOSAURIDAE; STEGOSAURINAE; *Stegosaurus*; *S. armatus*; *S. stenops*; western U.S.A.; Upper Jurassic.

1. Marsh (1877, p. 513) established *Stegosaurus armatus* (and the order Stegosauria) based on unfigured material (YPM 1850) from Morrison, Wyoming from what is now known as the Morrison Formation, the source of all stegosaurs collected from the U.S.A. Marsh (1880) also erected the STEGOSAURIDAE. Subsequent workers recognised *Stegosaurus armatus* without reference to the holotype that was redescribed by Carpenter & Galton (2001; see also Galton 2010, fig. 1). YPM 1850 includes several incomplete vertebrae: 2 dorsals, caudal 1 or 2, an anterior caudal vertebra, several blocks containing 16 incomplete articulated vertebrae from the proximal half of the tail, and a very large but incomplete dermal plate.

2. Cope (1878) described, but did not illustrate, material from Garden Park near Cañon City, Colorado, as *Hypsirhophus discursus*. The holotype (AMNH 5731) is a dorsal vertebra and an incomplete anterior caudal neural arch. It was redescribed by Carpenter (1998a), who tentatively considered it to be a valid taxon, as did Carpenter

et al. (2001), based on characters of the dorsal vertebra. It has also been regarded as a junior synonym of *Stegosaurus armatus* (Galton, 1990; Galton & Upchurch, 2004; Maidment et al., 2008; Maidment, 2010) or as a valid species (Galton 2010).

3. Marsh (1879, p. 504) briefly described *Stegosaurus unguatus* based on two partial skeletons YPM 1853 (which may represent more than one individual, see Carpenter & Galton, 2001) and YPM 1858 from YPM Quarries 12 and 11, respectively, at Como Bluff near Como station, Wyoming. Bones of the syntypes were figured by Marsh (1880, 1881a, 1891, 1896), Lull (1910), Gilmore (1914), Ostrom & McIntosh (1966, 1999), Carpenter & Galton (2001) and Galton (2001, 2010). *S. unguatus* is currently regarded as a junior synonym of *S. armatus* (Galton, 1990; Galton & Upchurch, 2004; Maidment et al., 2008) or as a valid species (Galton & Carpenter, 2001; Galton 2001, 2010, figs. 2b, 3a–e, k–o, r).

4. Marsh (1881b, p. 421) established *Diracodon laticeps* based on the characters of teeth in a pair of maxillae from YPM Quarry 13, Como Bluff. Gilmore (1914) considered a distal tail with spikes (USNM 4288) and three carpal bones in manus referred to *Diracodon laticeps* by Marsh (1887, p. 416, pl. 9), and probably also the holotype maxillae, to represent juvenile individuals of *Stegosaurus stenops* Marsh, 1887 (Gilmore, 1914, pp. 104, 108–109). The two incomplete holotype tooth-bearing bones, YPM 1885, were first illustrated as dentaries by Carpenter & Galton (2001). *Diracodon laticeps* Marsh, 1881b is regarded as a nomen dubium (Carpenter & Galton, 2001) or, incorrectly, as a valid taxon (Bakker, 1986, pp. 188, 227) or a junior synonym of either *Stegosaurus stenops* Marsh, 1887 (Galton, 1990, 2010; Galton & Upchurch, 2004) or *S. armatus* Marsh, 1877 (Maidment et al., 2008).

5. In 1887 Marsh figured a complete skull (USNM 4934) from Garden Park as *Stegosaurus stenops*. The rest of the skeleton, which is still in more or less natural articulation as found with 17 plates in position (see Gilmore, 1914; Czerkas, 1987) is complete except for a few distal caudal vertebrae and the anterior pair of tail spikes. The bones were described by Gilmore (1914) and illustrated by Marsh (1891, 1896) and Ostrom & McIntosh (1966, 1999). The skull was also described by Huene (1914) and reconstructed in several views by Galton (1990), Sereno & Dong (1992) and Galton & Upchurch (2004). Reconstructions of the skeleton, with the last part of the tail and the anterior pair of tail spikes based on USNM 4714 from YPM Quarry 13, Como Bluff (Gilmore 1914) were given by Czerkas (1987) and by Paul (1992), Galton (1997, 2010) and Carpenter (2010) who also used data from a second articulated, almost complete referred skeleton from Garden Park (DMNH 2818, see Carpenter, 1998b, fig. 2 as found in quarry, 2007, fig. 2 for other side; found stratigraphically within 10 m of the holotype). *S. stenops* is regarded either as a valid species (Galton, 1990, 2010; Galton & Upchurch, 2004; Carpenter et al., 2001; Carpenter, 2010) or as a junior synonym of *S. armatus* (Maidment et al., 2008; Maidment, 2010).

6. *Stegosaurus duplex* Marsh, 1887 (p. 416) is based on a partial skeleton lacking dermal armor (YPM 1858) from YPM Quarry 12 at Como Bluff, which was described and/or illustrated by Marsh (1881a, 1891, 1896), Lull (1910), Ostrom & McIntosh (1966, 1999) and Carpenter & Galton (2001). *S. duplex* has been regarded as a junior objective synonym of *S. unguatus* Marsh, 1879 (Lull, 1910; Gilmore, 1914; Carpenter & Galton, 2001; Galton, 2001, 2010; Maidment et al., 2008, p. 382), which in turn is either a valid species or a junior synonym of *S. armatus* (see section 3).

7. Marsh (1887) illustrated a tail spike, USNM 4937 from YPM Quarry 13 at Como Bluff, as *Stegosaurus sulcatus*. Gilmore (1914) figured this tail spike in articulation with its antimere that lacks sulci. Bakker (1988) showed that the curvature of the very wide spike bases was too shallow to fit over the distal part of the tail. This species is regarded as valid (Galton, 2010, figs. 3g, q), as a junior synonym of *S. armatus* (Galton, 1990; Galton & Upchurch, 2004), or as a nomen dubium (Maidment et al., 2008).

8. Gilmore (1914) described and diagnosed the species of *Stegosaurus* based on the USNM holotypes of *S. stenops* and *S. sulcatus*, and reproduced line drawings of *S. unguatus* from Marsh (1896). He erected *S. longispinus* for a partial skeleton, UW D54 (now UW 20503) from Alcova, Natrona County, Wyoming. This species is considered to be a nomen dubium (Maidment et al., 2008) or valid (Galton, 1990, 2010; Carpenter et al., 2001; Galton & Upchurch, 2004); it is diagnosed by very distinctive distal caudal vertebrae and two pairs of very elongate tail spikes with sub-equal bases (Galton, 2010, figs. 3h–j, u, v).

9. Ostrom & McIntosh (1966, reprinted 1999) provided copies of the unpublished lithographic plates of *Stegosaurus* prepared under the supervision of O.C. Marsh in the 1880s. They labelled specimens as *S. armatus* (referred braincase USNM 4936 from Garden Park; braincase and associated postcrania described by Galton (2001) as *S. stenops*), *S. unguatus* (with *S. duplex* as a junior synonym), *S. stenops* and *S. sulcatus*.

10. Galton (1990; also Galton & Upchurch, 2004) noted that the holotype of *Stegosaurus armatus* needed further preparation but considered that *S. unguatus* was probably a junior synonym, along with *Hypsirhopus discursus*, *Stegosaurus sulcatus* and *S. duplex*. *S. stenops* and *S. longispinus* were regarded as separate valid species.

11. Carpenter et al. (2001) described *Hesperosaurus mjosi* based on a partial skeleton (HMNH 001, cast DMNH 29431) from low in the Morrison Formation in Johnson County, Wyoming. The holotype consists of a nearly complete, disarticulated skull, a complete vertebral column, a partial left scapula and coracoid, ilia, ischia, pubes, 11 dermal plates and four tail spikes. Carpenter et al. (2001) recognised *Stegosaurus armatus*, *S. unguatus*, *S. stenops*, *S. longispinus* and *Hypsirophus discursus* as valid species. They also pointed out that the three genera of Morrison stegosaurs have a restricted distribution within the Dinosaur Zones of Turner & Peterson (1999), with *Hesperosaurus* limited to Zone 1, *Stegosaurus* to Zones 2 and 3, and *Hypsirophus* to Zone 4.

12. Based on a cladistic analysis of the species of Stegosauria they considered to be valid, Maidment et al. (2008) gave seven autapomorphies for the genus *Stegosaurus* sensu Maidment et al. (2008) and five for the species *armatus*, with *Hypsirophus discursus*, *Stegosaurus unguatus* (with *S. duplex* as a subjective junior synonym), *Diracodon laticeps*, and *Stegosaurus stenops* as junior synonyms of *S. armatus*, and *S. sulcatus* and *S. longispinus* as nomina dubia. *Hesperosaurus mjosi* and *Wuerhosaurus homheni* Dong, 1973 (Lower Cretaceous, China, see Dong, 1990) were referred to *Stegosaurus* as *S. mjosi* (Carpenter et al., 2001) and *S. homheni* (Dong, 1973) and also by Maidment (2010).

13. Mossbrucker et al. (2009) noted that further preparation of the blocks of YPM 1850 showed that two fit together (indicated by *, Galton 2010, fig. 1b) to give taller than predicted neural spines for mid-caudal centra, a possibly diagnostic character for *Stegosaurus armatus* as defined by the holotype.

14. Carpenter (2010) provided a revised diagnosis of *Hesperosaurus mjosi* (with contrasting character states for *Stegosaurus stenops*) that included characters from two referred skeletons from low in the Morrison Formation near Howe Ranch, Wyoming (see Siber & M  ckli, 2009). He considered that there are too many differences between the skeletons of *H. mjosi* and *Stegosaurus stenops* to support referral to the same genus (see skeletal reconstructions in Carpenter, 2010, figs. 7a, b).

15. Maidment (2010) presented a historical survey of the stegosaurian species described from the Morrison formation and repeated the systematic conclusions of Maidment et al. (2008), i.e. recognising *Stegosaurus armatus* (with *Hypsirophus discursus*, *Stegosaurus unguatus*, *Diracodon laticeps* and *Stegosaurus stenops* as junior synonyms) and *S. mjosi* as valid taxa [also *S. homheni* (Dong, 1973)].

16. Galton (2010) noted that the holotype of *Stegosaurus armatus* displayed none of the five putative autapomorphic characters listed by Maidment et al. (2008) for the species *armatus* in its current usage and only one of the seven autapomorphic characters for the genus *Stegosaurus*, i.e. the transverse process on the anterior caudal vertebrae (except C1 and C2) projects ventrally rather than laterally. But the holotype of *Hesperosaurus mjosi* also has this feature, hence YPM 1850 actually displays no autapomorphic characters of *S. armatus* in its current usage and so *S. armatus* as defined by the holotype should therefore be considered a nomen dubium. *Hypsirophus discursus* Cope, 1878 and *Diracodon affinis* Marsh, 1881a, each with one of the autapomorphic characters of the species *armatus* in its current usage, are available as possible replacement type species for *Stegosaurus* Marsh, 1877. As noted in previous sections, most of the other species of *Stegosaurus* available as a replacement type species are based on incomplete, disarticulated partial skeletons with no skull or field records, i.e. *S. unguatus* (has braincase but at least two individuals involved), *S. duplex*, *S. sulcatus* and *S. longispinus* (details in Galton, 2010). In marked contrast, the holotype skeleton (USNM 4934) of *S. stenops* is almost complete, with a skull. It is mostly preserved in the rock as found, and there is another comparable complete articulated skeleton from the type locality. *Stegosaurus stenops* Marsh, 1887 displays all 12 autapomorphies determined for the currently accepted concept of *S. armatus* Marsh, 1877 by Maidment et al. (2008), and is) the only species showing the following two: alternating rows of dermal plates down the midline for *Stegosaurus* (also in DMNH 2818), and nuchal dermal ossicles for *S. armatus* (also in DMNH 2818). Consequently, Galton (2010) indicated the need to petition the Commission to designate *Stegosaurus stenops* Marsh, 1887 as the new type species of *Stegosaurus* Marsh, 1877 to replace *S. armatus* Marsh, 1877. This action would preserve stability by conserving *Stegosaurus* Marsh, 1877, Stegosauria Marsh, 1877, STEGOSAURIDAE Marsh, 1880, STEGOSAUROIDEA Marsh, 1880 and STEGOSAURINAE Marsh, 1880.

17. Should the more elongate mid-caudal neural spines of YPM 1850 prove to be a diagnostic character, as suggested by Mossbrucker et al. (2009), then this would be diagnostic for the species *armatus* as defined by the holotype and YPM 1850 would still lack any of the seven autapomorphies of the genus *Stegosaurus* in its current usage (Maidment et al., 2008).

18. The possibility of designating the holotype of *Stegosaurus stenops*, USNM 4934, as a neotype for *S. armatus* Marsh, 1879 in place of the latter's extant holotype YPM 1850, thereby making the two names objective synonyms, has been considered.

However, it was rejected on the basis that the synonymy of the two species cannot be proven and, because of the possible presence of a diagnostic character in the holotype that could differentiate the species *armatus* from other species in the group, this could possibly necessitate the erection of a new species for YPM 1850. The interests of stability at the generic level are not served by having *armatus* as the type species of *Stegosaurus*, because the incomplete and fragmentary holotype of this species lacks the characters of the widely used concept of that genus. In the absence of a Commission's ruling, a new genus could be erected based on *S. stenops*, thereby restricting *Stegosaurus* to *S. armatus*, and giving a new name to the generally accepted concept of the genus *Stegosaurus*. Consequently, conserving the name of the universally known genus *Stegosaurus* in its current usage is considered urgent and important.

19. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous fixations of type species for the nominal genus *Stegosaurus* Marsh, 1877 and to designate *Stegosaurus stenops* Marsh, 1887 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Stegosaurus* Marsh, 1877 (gender: masculine), type species *Stegosaurus stenops* Marsh, 1887, as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *stenops* Marsh, 1887, as published in the binomen *Stegosaurus stenops* (specific name of the type species of *Stegosaurus* Marsh, 1877, as ruled in (1) above).

Institutional abbreviations: AMNH, American Museum of Natural History, New York, U.S.A.; DMNH, Denver Museum of Nature and Science (formerly Denver Museum of Natural History), Colorado, U.S.A.; HMNH, Hayashibara Museum of Natural History, Okayama, Japan; USNM, National Museum of Natural History (formerly United States National Museum), Washington, D.C., U.S.A.; UW, Department of Geology and Geophysics, University of Wyoming, Laramie, U.S.A.; and YPM, Peabody Museum of Natural History, Yale University, New Haven, Connecticut, U.S.A.

References

- Abel, O. 1919. *Die Stamme der Wirbeltiere*. 914 pp. De Gruyter, Berlin & Leipzig.
- Bakker, R.T. 1986. *The dinosaur heresies: new theories unlocking the mystery of the dinosaurs and their extinction*. 482 pp. William Morrow, New York.
- Bakker, R.T. 1988. Review of the Late Cretaceous nodosauroid Dinosauria *Denversaurus schlessmani*, a new armor-plated dinosaur from the latest survivor of the nodosaurians, with comments on stegosaur-nodosaur relationships. *Hunteria*, **1**: 1–23.
- Carpenter, K. 1998a. Armor of *Stegosaurus stenops*, and the taphonomic history of a new specimen from Garden Park, Colorado. *Modern Geology*, **23**: 127–144.
- Carpenter, K. 1998b. Vertebrate biostratigraphy of the Morrison Formation near Cañon City, Colorado. *Modern Geology*, **23**: 407–426.
- Carpenter, K. 2007. How to make a fossil: Part 1 – Fossilizing bone. *Journal of Paleontological Sciences*, **1**: 1–10.
- Carpenter, K. 2010. Species concepts in North American stegosaurs. *Swiss Journal of Geosciences*, **103**: 155–162.

- Carpenter, K. & Galton, P.M. 2001. Othniel Charles Marsh and the myth of the eight-spiked *Stegosaurus*. Pp. 76–102 in Carpenter, K. (Ed.), *The armored dinosaurs*. Indiana University Press, Bloomington.
- Carpenter, K., Miles, C.A. & Cloward, K. 2001. New primitive stegosaur from the Morrison Formation, Wyoming. Pp. 55–75 in Carpenter, K. (Ed.), *The armored dinosaurs*. Indiana University Press, Bloomington.
- Cope, E.D. 1878. A new genus of Dinosauria from Colorado. *American Naturalist*, **12**: 181.
- Czerkas, S.A. 1987. A reevaluation of the plate arrangement on *Stegosaurus stenops*. Pp. 83–99 in Czerkas, S.J. & Olson, E.C. (Eds.), *Dinosaurs past and present, Volume 2*. University of Washington Press, Seattle.
- Dong, Z.-M. 1973. Dinosaurs from Wuerho. *Institute of Vertebrate Paleontology and Paleoanthropology, Memoirs*, **11**: 45–52.
- Dong, Z.-M. 1990. Stegosaur of Asia. Pp. 255–268 in Carpenter, K. & Currie, P.J. (Eds.), *Dinosaur systematics. Approaches and perspectives*. Cambridge University Press, Cambridge.
- Galton, P.M. 1990. Stegosauria. Pp. 435–455 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 1st Edition*. University of California Press, Berkeley.
- Galton, P.M. 1997. Stegosaur. Pp. 291–306 in Farlow, J.A. & Brett-Surman, M.K. (Eds.), *The complete dinosaur*. Indiana University Press, Bloomington.
- Galton, P. M. 2001. Endocranial casts of the plated dinosaur *Stegosaurus* (Upper Jurassic, western USA): A complete undistorted cast and the original specimens of Othniel Charles Marsh. Pp. 455–484 in Carpenter, K. (Ed.), *The armored dinosaurs*. Indiana University Press, Bloomington.
- Galton, P.M. 2010. Species of plated dinosaur *Stegosaurus* (Morrison Formation, Upper Jurassic) of western USA: new type species designation needed. *Swiss Journal of Geosciences*, **103**: 187–198.
- Galton, P.M. & Upchurch, P. 2004. Stegosauria. Pp. 343–362 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 2nd edition*. University of California Press, Berkeley.
- Gilmore, C.W. 1914. Osteology of the armoured Dinosauria in the United States National Museum, with special reference to the genus *Stegosaurus*. *United States National Museum, Bulletin*, **89**: i–xi, 1–143, pls. 1–36.
- Hay, O.P. 1902. Bibliography and catalogue of the fossil Vertebrata of North America. *United States Geological Survey, Bulletin*, **179**: 1–495.
- Huene, F. v. 1914. Über die Zweistämmigkeit der Dinosaurier, mit Beiträgen zur Kenntnis einiger Schädel. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Beilageband*, **37**: 577–589.
- Lull, R.S. 1910. *Stegosaurus unguatus* Marsh, recently mounted at the Peabody Museum of Yale University. *American Journal of Science*, (4)**30**: 361–377.
- Maidment, S.C.R. 2010. Stegosauria: a historical review of the body fossil record and phylogenetic relationships. *Swiss Journal of Geosciences*, **103**: 199–210.
- Maidment, S.C.R., Norman, D.B., Barrett, P.M. & Upchurch, P. 2008. Systematics and phylogeny of Stegosauria (Dinosauria: Ornithischia). *Journal of Systematic Palaeontology*, **6**: 367–407.
- Marsh, O.C. 1877. A new order of extinct Reptilia (Stegosauria) from the Jurassic of the Rocky Mountains. *American Journal of Science*, (3)**14**: 34–35.
- Marsh, O.C. 1879. Notice of new Jurassic reptiles. *American Journal of Science*, (3)**18**: 501–505.
- Marsh, O.C. 1880. Principal characters of American Jurassic dinosaurs. Part III. *American Journal of Science*, (3)**19**: 253–259.
- Marsh, O.C. 1881a. Principal characters of American Jurassic dinosaurs. Part IV: Spinal cord, pelvis, and limbs of *Stegosaurus*. *American Journal of Science*, (3)**21**: 167–170.
- Marsh, O.C. 1881b. Principal characters of American Jurassic dinosaurs. Part V. *American Journal of Science*, (3)**21**: 417–423.
- Marsh, O.C. 1882. Classification of the Dinosauria. *American Journal of Science*, (3)**23**: 81–86.
- Marsh, O.C. 1887. Principal characters of American Jurassic dinosaurs. Part IX: The skull and dermal armor of *Stegosaurus*. *American Journal of Science*, (3)**34**: 413–417.

- Marsh, O.C.** 1891. Restoration of *Stegosaurus*. *American Journal of Science*, (3)**42**: 179–181.
- Marsh, O. C.** 1896. The dinosaurs of North America. *United States Geological Survey, Annual Report*, **16**(1894–95): 133–244.
- Mossbrucker, M. T., Bakker, R. T. & Prueher, L.** 2009. New information regarding the holotype of *Stegosaurus armatus* (Marsh, 1877). *Symposium on Stegosauria. June 8 and 9. Scientific Meeting at Sauriermuseum Aathal, Switzerland, Abstracts*: 9.
- Ostrom, J.A. & McIntosh, J.S.** 1966. *Marsh's dinosaurs. The collections from Como Bluff*. xiv, 388 pp. Yale University Press, New Haven.
- Ostrom, J.A. & McIntosh, J.S.** 1999. *Marsh's dinosaurs. The collections from Como Bluff. With a new forward by Peter Dodson and a historical update by Clifford A. Miles and David W. Hamblin*. xxiv, 388 pp. Yale University Press, New Haven.
- Paul, G.** 1992. The arrangement of the plates in the first complete *Stegosaurus*, from Garden Park. *Tracks in Time, Garden Park Paleontological Society*, **3**(1): 1–2.
- Sereno, P.C. & Dong, Z.-M.** 1992. The skull of the basal stegosaur *Huayangosaurus taibaii* and a cladistic diagnosis of Stegosauria. *Journal of Vertebrate Paleontology*, **12**: 318–343.
- Siber, H.J. & Möckli, U.** 2009. *The stegosaurs of the Sauriermuseum Aathal*. 56 pp. Sauriermuseum, Aathal.
- Turner, C.E. & Peterson, F.** 1999. Biostratigraphy of dinosaurs in the Upper Jurassic Morrison Formation of the Western Interior, U.S.A. In Gillette, D. (Ed.), *Vertebrate Paleontology in Utah. Utah Geological Survey Miscellaneous Publication*, **99–1**: 77–114.

Acknowledgement of receipt of this application was published in BZN **67**: 270.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on the proposed conservation of the specific name *Boccardia proboscidea* Hartman, 1940 (Annelida, SPIONIDAE)
(Case 3520; see BZN 67: 203–210)

Kristian Fauchald

*National Museum of Natural History, Smithsonian Institution, MRC 163,
Washington, DC 20560, U.S.A. (e-mail: fauchald@si.edu)*

Vasily I. Radashevsky

*A.V. Zhirmunsky Institute of Marine Biology, Far Eastern Branch of the Russian
Academy of Sciences, Vladivostok 690041, Russia (e-mail: radashevsky@gmail.com)*

Leslie H. Harris

*Research & Collections, Natural History Museum of Los Angeles County,
Los Angeles, California 90007, U.S.A. (e-mail: exogone@hotmail.com)*

The application by Radashevsky & Harris (BZN 67: 203–210) asked for conservation of the specific name *Boccardia proboscidea* Hartman, 1940, used for a widely dispersed mudworm (family SPIONIDAE) described from California and requested that all previous type designations for *B. proboscidea* be set aside in favour of a neotype. Part of their rationale for designating a neotype was based on the fact that while Hartman (1940) stated that the holotype was deposited at the United States National Museum (USNM), the vial Hartman sent to the USNM contained 12 specimens.

However, designation of a neotype would limit the name-bearing types of *B. proboscidea* to one specimen and deprive all the other specimens of this status. Such an act would contradict Hartman's concept of type specimens which was based on the 1st and 2nd editions of the ICZN. Prior to 1999 the Code did not require a type specimen. Only after 1999 were holotype or syntypes required to be designated for any newly-described species-group taxon (Articles 72.2, 72.3 of the current Code).

We do not know exactly why Hartman listed the multiple-specimen type lot of *B. proboscidea* as 'the holotype'. In a letter dated 19 February 1937 to Dr Waldo Schmitt, Curator of Invertebrates, USNM, she said 'I have sent off to you today, eight vials containing polychaetous specimens designated as holotypes'. In his return letter dated 27 February 1937, Dr Schmitt replied 'In a few cases you had more than one worm in a bottle marked holotype. Of course, we shall select the nicest looking one for the holotype, but in the future it would be better if you were to specifically designate one species [sic; *lapsus* for specimen] of a lot as holotype either by tying on a bit of thread or else putting it in a separate vial' (excerpts of the Hartman-Schmitt correspondence provided courtesy of the Smithsonian Institution Archives). Besides *B. proboscidea*, other spionid species with multi-specimen 'holotypes' are *Polydora amaricola* Hartman, 1936 (USNM 20214, 5 specimens, status listed as type in the USNM catalogue), *Polydora brachycephala* Hartman, 1936 (USNM 20215, 4 specimens, status listed as syntype in the USNM catalogue), *Pygospio californica* Hartman

1936 (USNM 20219, 4 specimens, status listed as type in the USNM catalogue), *Rhynchospio arenicola* Hartman, 1936 (USNM 20221, 4 specimens, status erroneously listed as paratype in the USNM catalogue), and *Streblospio lulincola* Hartman, 1936 (USNM 20220, 15 specimens, status erroneously listed as paratype in the USNM catalogue). These problematic cases will be described in an upcoming catalogue of types of the spionid polychaetes deposited in North American museums (Harris & Radashevsky, in preparation).

Joint work and personal collaboration with Olga Hartman by one of us (KF) and extensive study of Hartman's personal papers preserved in the LACM by another (LH) unequivocally shows that Hartman believed a series of type specimens better represented a new species than a single holotype. Single specimen holotypes were designated by Hartman mainly when only one individual was available for examination. We therefore assume that her designation of multiple-specimen type lots was due to Hartman's personal concept of types. Why Hartman called these multiple-specimen lots holotypes instead of syntypes, as she did in some other cases, remains unknown.

Hartman stated in several early papers that she deposited the holotypes of newly described species in the United States National Museum in Washington, D.C. and split the paratypes between the Zoological Museum of the University of California, Berkeley (where she received her Ph.D.) and the California Academy of Sciences, San Francisco. Around 1943 the bulk of the University of California polychaete collection, including type material, was given to the Allan Hancock Foundation, University of Southern California (AHF). As previously mentioned by Radashevsky & Harris (BZN 67: 203–210), there is evidence in Hartman's personal papers and collection labels (LACM-AHF Polychaete Collection archives, unpublished) to show that LACM-AHF POLY 1226 was considered by Hartman to be a type lot for *B. proboscidea*. An early Allan Hancock Foundation type inventory made by Hartman includes '*Boccardia proboscidea* Hartman AHF no. 117 [cotype]'. The specimens in this lot and in the 'holotype' lot (USNM 20217) were all collected by Hartman on 4 July 1934, from vertical burrows in intertidal sandstone at Caspar, Mendocino County, California. Both lots have been examined by VIR and found to include specimens of the same species in good condition. Under Article 72.4.1.1 of the current Code ('For a nominal species or subspecies established before 2000, any evidence, published or unpublished, may be taken into account to determine what specimens constitute the type series.') these two samples represent valid type material of the species.

Article 75.5 of the Code was incorrectly used by Radashevsky & Harris (BZN 67: 205) to justify designation of neotype for *B. proboscidea*. It refers to a situation when 'the taxonomic identity of a nominal species-group taxon cannot be determined from its existing name-bearing type (i.e. its name is a nomen dubium), and stability or universality are threatened thereby'. As Hartman's types do exist in good condition with the problem being the uncertainty of which specimen is the holotype (i.e. the name-bearing specimen), we believe that the best solution about these types would be to leave them as syntypes. This would also be in agreement with what we feel was Hartman's original intent.

Consequently, we here suggest rephrasing the proposal by Radashevsky & Harris (BZN 67: 203–210) in the following manner:

13. The International Commission of Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to rule that the name *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea*, be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
 - (b) to suppress the name *californica* Fewkes, 1889, as published in the binomen *Spio californica*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by syntypes USNM 20217 and LACM-AHF POLY 1226, with the endorsement that it is to be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
 - (b) *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, with the endorsement that it is not to be given priority over *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by syntypes USNM 20217 and LACM-AHF POLY 1226, whenever the two are considered to be synonyms;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *californica* Fewkes, 1889, as published in the binomen *Spio californica* and as suppressed in (1)(b) above.

Comments on the proposed designation of a neotype for the nominal species *Chionobas chryxus* Doubleday, 1849 (currently *Oeneis chryxus*; Insecta, Lepidoptera, NYMPHALIDAE)
(Case 3495; see BZN 67: 121–128)

(1) Jonathan P. Pelham

Burke Museum of Natural History and Culture, Box 353010 University of Washington, Seattle, WA 98195 3010, U.S.A. (e-mail: zapjammer@frontier.com)

I strongly disagree that stability is served by use of the plenary power to suppress the validly designated lectotype of *Chionobas chryxus* and replace it with a neotype.

1. The lectotype of *Oeneis chryxus* designated by Shepard (1984) represents the taxon as it has been understood since its description. The statement in the abstract of the petition ‘the original figure perfectly matches males of one of the two species into which the species was later divided’ suggests widespread acceptance that there are two species when actually the matter of this species division into two is based only on two papers in the same publication.

2. Only one paper has been published to date that utilises the nomenclature put forth by the authors in 2006 (Kondla, 2010) and that paper is by one of those authors.

3. The author of the petition claims that the lectotype is indeterminate, but this is a subjective matter not supported by the views of subsequent researchers. There is no reason to suppose that the male figured in Doubleday & Hewitson, apparently lost, is not the same species as the lectotype, possibly even collected with it, and such has been held to be the case since the lectotype was designated. Most researchers are completely unaware of the issue and it seems prudent to await serious consideration from a broad spectrum of naturalists before any decision requiring the plenary power is rendered.

4. It is my opinion that the designation of a neotype through the exercise of the plenary power is unwarranted in the face of what remains a very limited view. It does not stabilise an uncertain nomenclature because at this time there is no uncertain nomenclature.

Additional references

Kondla, N.G. 2010. Section 2. Butterflies. Pp. 163–192 in Pohl, G.R., Anweiler, G.G., Schmidt, B.C. & Kondla, N.G. An annotated list of the Lepidoptera of Alberta, Canada. *ZooKeys*, 38: 1–549.

(2) Andrew D. Warren

McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, SW 34th Street and Hull Road, P.O. Box 112710, Gainesville, FL 32611–2710, U.S.A. (e-mail: andy@butterfliesofamerica.com)

There is no ‘exceptional need’ for a neotype of *Chionobas chryxus*. The petitioner claims that there are two species of ‘*Oeneis chryxus*’ occurring in Colorado and elsewhere in the Rocky Mountains of western North America. This hypothesis was recently proposed (Scott, 2006), and has never been tested through rigorous morphological study or molecular techniques. Subsequent authors dealing with the North American fauna have not followed Scott’s nomenclature (with the single exception of Kondla (2010)). Much of the wording in Scott’s petition portrays as ‘fact’ concepts that have never been corroborated by detailed research. Many statements presented as fact about ‘two species’ in the southern Rocky Mountains on pages 125–127 of the petition are debatable, and some are erroneous. My own experience with *Oeneis* in Colorado (where I grew up collecting them regularly, including the same populations Scott has based his hypotheses upon), as well as current insight gleaned from curating 3,376 specimens of the *Oeneis chryxus* complex in the collections of the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida [MGCL], suggest that Scott has badly misinterpreted the actual patterns of geographic variation in *Oeneis chryxus*.

There seem to be two taxonomic entities within *Oeneis chryxus* in Colorado, but my preliminary analysis of MGCL material indicates only one species is likely to be present. This same analysis indicates that the high-elevation entity *O. chryxus altacordillera* Scott from Colorado does not occur to the north in the Rocky Mountains of Wyoming, Montana and Alberta. In this region, only one taxon is

present, which has always been regarded as *Oeneis chryxus*. *O. chryxus altacordillera* does not occur in Alberta (none of 155 specimens examined from Alberta in MGCL could be considered *altacordillera*), and its occurrence in Montana and Wyoming is doubtful. Thus, there should be no confusion over the identity of Shepard's (1984) lectotype for *Chionobas chryxus*, very probably from Alberta.

Much of Scott's argument for the need of a neotype is based on the hypothesis that females of *O. chryxus* are not useful for identifying subspecies (or sibling species as claimed by Scott). In my experience, this is simply not the case. Females of *O. chryxus* demonstrate as much geographic variation as males, and are useful for identifying subspecies-level taxa, including *altacordillera* (as defined by Scott). Most importantly, all authors prior to Scott (Case 3495, who suggested Wyoming) agree that Shepard's (1984) lectotype female likely originated in the Rocky Mountains of Alberta.

My analysis of the *Oeneis chryxus* group, together with recent literature, leads me to believe that Scott's hypotheses about species-level relationships in the group are almost certainly incorrect. Most of the statements presented as facts about the supposed species diversity of the group in the southern Rocky Mountains are untested hypotheses, and have not been widely accepted in the recent literature. Most importantly, if Scott's *altacordillera* does not occur as far north as the Rocky Mountains of Alberta, there should be no confusion over the identity of any female *Oeneis chryxus* from this region or of Shepard's (1984) lectotype from the Alberta Rockies, so therefore there is absolutely no need for a neotype.

Additional references

- Kondla, N.G. 2010. Section 2. *Butterflies*. Pp. 163–192 in Pohl, G.R., Anweiler, G.G., Schmidt, B.C. & Kondla, N.G. An annotated list of the Lepidoptera of Alberta, Canada. *ZooKeys*, 38: 1–549.

(3) John V. Calhoun

977 Wicks Drive, Palm Harbor, Florida, 34684–4656, U.S.A. and McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, Florida, U.S.A. (e-mail: brethall@verizon.net)

This case is based on the premise that the nominal species *Chionobas chryxus* can not be identified from its existing name-bearing type, and stability or universality are thereby threatened. With the exception of Scott (2006), in which *Oeneis calais altacordillera* was described, the identity of *C. chryxus* has remained virtually uncontested since it was named and figured in 1849. Kondla (2010), who co-authored portions of Scott (2006), is one of the few authors to subsequently employ the name *Oeneis calais altacordillera*. Based on recommendations from other lepidopterists, Pelham (2008) listed both *calais* and *altacordillera* as subspecies of *chryxus*. Holland (2010) also treated *altacordillera* as a subspecies of *C. chryxus*, which he characterised as a 'plastic taxon'. Warren et al. (2010) treat *altacordillera* as a junior subjective synonym of nominotypical *chryxus*.

There seems to be little justification at this time to set aside the valid lectotype of *C. chryxus* in response to the recognition of a poorly understood and contentious

taxon. The lectotype specimen has been accepted as the type of *Chionobas chryxus* for over 80 years and is still considered by the majority of lepidopterists to represent this nominal species. I therefore perceive no imminent threat to nomenclatural stability which would warrant exercising Art. 81 in accordance with Art. 75.5 of the Code.

Supplemental remarks

I attempted by various means to locate the male specimen that was figured by Doubleday (1849). Because Edward Doubleday often exchanged specimens with the French entomologist Jean B.A.D. de Boisduval, I recently asked staff at the National Museum of Natural History (Smithsonian Institution, Washington, D.C.) to search that collection for the missing male (it was not found). With the help of library staff at NHM, I also recently searched, without success, for references to *C. chryxus* among the manuscripts of Edward Doubleday.

Scott (para. 10) perceives Article 72.4.1.1 to be subservient to Article 72.4.1, thus he will accept the lectotype as valid only if these articles are interpreted independently. According to ICZN (1999, p. XIII), each article in the current edition of the Code ‘consists of one or more mandatory provisions, which are sometimes accompanied by Recommendations and/or illustrative Examples.’ This establishes that all provisions must be considered, but does not indicate that subsections are universally subservient. The insertion of 72.4.1.1 into the fourth edition of Code broadens the scope of 72.4.1 and eliminates the need to designate a neotype in many instances. External evidence can be valuable when attempting to determine the type series of a nominal taxon for which there was no written description (as in *C. chryxus*). The illustration of a single specimen does not remove the possibility that the author’s concept of that taxon was based upon multiple specimens. However, I feel that Article 72.4.1 lacks the necessary language to clearly embrace such circumstances, thereby resulting in confusion over the application of 72.4.1.1 (as demonstrated by Case 3495). Article 72.4 should be modified to rectify this deficiency.

Although Scott is reluctant to accept the lectotype pursuant to Article 72.4.1.1, ample published and unpublished evidence suggests that this specimen was a syntype of *C. chryxus*. In addition to the evidence reviewed by Scott, Butler (1868) did not list any other species of *Oeneis* (= *Chionobas*) in the British Museum from ‘Rocky Mountains’ that were available to Doubleday. Although Butler (p. 162) listed *Oeneis uhleri* (Reakirt, 1866) from ‘Rocky Mountains’, he restricted the locality to ‘Colorado Territory’ and did not denote that the British Museum possessed any specimens. This species was first collected in 1864 (Reakirt, 1866, p. 122) and the oldest specimens in NHM, from Colorado and Utah, are dated 1900 (B. Huertas, pers. comm.).

Additional references

- Holland, R. 2010. A new subspecies of *Oeneis chryxus* (Nymphalidae: Satyridae) from south central New Mexico. *Journal of the Lepidopterists’ Society*, **64**: 161–165.
- Kondla, N.G. 2010. Section 2. Butterflies. Pp. 163–192 in Pohl, G.R., Anweiler, G.G., Schmidt, B.C., & Kondla, N.G., An annotated list of the Lepidoptera of Alberta, Canada. *ZooKeys*, **38**: 1–549.
- Pelham, J.P. 2008. A catalogue of the butterflies of the United States and Canada. With a complete bibliography of the descriptive and systematic literature. *Journal of Research on the Lepidoptera*, **40**: i–xiv, 1–652.

Reakirt, T. 1866. Coloradian butterflies. *Proceedings of the Entomological Society of Philadelphia*, 6: 122–151.

Warren, A.D., Davis, K., Grishin, N.V., Pelham, J.P. & Strangeland, M. 2010. Butterflies of America. Website, <http://butterfliesofamerica.com> (Accessed 14 June 2011).

Comment on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*; Reptilia, Testudines)

(Case 3463; see BZN 66: 34–50, 80–87, 169–186, 274–290, 352–357; 67: 71–90, 170–178, 246–254, 319–331; 68: 72–77)

J. Frazier

Department of Vertebrate Zoology – Amphibians & Reptiles, National Museum of Natural History, Smithsonian Institution, PO Box 37012, Washington DC 20013–7012, U.S.A. (e-mail: kurma@shentel.net)

Pat Matyot

Seychelles Islands Foundation, Board of Trustees, c/o PO Box 321, Victoria, Mahé, Seychelles (e-mail: pat.matyot@sbc.sc)

Hoogmoed (BZN 68: 72–77) criticised the paper in *Zootaxa* by Frazier & Matyot (2010), calling for their conclusions to be considered void. The *Zootaxa* paper provided a detailed compilation and evaluation of numerous historic and contemporary sources, considered results of consultations with diverse colleagues, and made two fundamental conclusions: (1) the locality for RMNH 3231, the lectotype of *Testudo dussumieri* Gray, 1831, is uncertain; it is unlikely to be Aldabra Atoll, but is likely to be Mahé, granitic Seychelles; (2) the combination of apparent time and locality of collection, together with the unique haplotype, raises a possibility that the specimen is an extinct Seychelles tortoise – not an Aldabra tortoise. Despite his 6-page comment, Hoogmoed provided no new information to remove uncertainty about the provenance and taxonomic identity of the specimen, and he continues to ignore recognised sources of error. Only a brief summary of the extensive details presented in Frazier & Matyot (2010) will be given herein, where we limit the discussion to the evidential basis of the issues.

The locality of the lectotype of *Testudo dussumieri* Gray, 1831

There is no evidence that J.-J. Dussumier, considered to be the collector of the lectotype, ever visited Aldabra, but he is definitely known to have made collections on Mahé, in the granitic Seychelles, at a time (possibly as early as 1823) when native Seychelles tortoises were still in existence. Dussumier is also known to have visited the Mascarene Islands of Mauritius and Ile Bourbon (La Réunion), where thousands of tortoises from the granitic Seychelles, as well as from Aldabra, had been imported. For example, in his summary of historic records, Bour (1984, p. 302) reported that ‘from 1773 to 1810, at least 25 ships carrying Tortoises from central Seychelles Islands entered Mauritius’, adding in a footnote that ‘a ship could load from 500 to 6000 Tortoises’ (though the latter figure is questionable). According to Toussaint (1965, p. 56), in December 1808 the *Favorite* was still transporting a cargo of land

tortoises from Seychelles to Mauritius; likewise, in October 1807 the *Amazone* carried a load of land tortoises from Seychelles to Réunion (p. 61). A.M.C. Duméril, G. Bibron and A.H.A. Duméril, herpetologists at the Paris Museum where Dussumier's collections were received, recorded his tortoises from Anjouan (Comores) and Seychelles – there is no mention of any Dussumier tortoise from Aldabra.

Gray's original (1831) description of *T. dussumieri* is confused for many reasons; while he evidently saw a small tortoise in Leiden sometime before 1831, it is unclear – among other things – what data accompanied it, a fact recognised by Hoogmoed (BZN 68: 74). Several years later, in their section on *T. indica*, Temminck & Schlegel (1834, p. 75) included the statement 'Cet établissement a reçu du Musée de Paris un autre individu très-jeune, communiqué sous l'épithète de *Test. Dussumieri*, rapporté par le voyageur dont elle porte le nom, de l'île Aldebra située au nord du canal de Mosambique.' ['This institution {The Leiden Museum} has received from the Paris Museum another very young individual, sent under the name of *Test. Dussumieri*, brought by the traveler whose name it bears, from Aldabra Island situated in the north of the Mozambique Channel.']. As Hoogmoed explained (BZN 68: 74 and following pages), it is unknown on what Temminck & Schlegel based this statement.

Originally, Hoogmoed (BZN 66: 354–356; Hoogmoed et al., 2010) claimed that the lectotype has good locality data based on the assertion that the old label that accompanies RMNH 3231 was the 'original label' from Paris, but he now admits (BZN 68: 77) that 'there is a good chance that the old label' is not the original, and probably postdates both Gray and Temminck & Schlegel. He also acknowledges various other uncertainties, including unknown collection management practices during the early years of the Leiden Museum, beginning in 1820 and for the next few decades: 'About the early history of its management we know little and it even is not quite certain when the present numbering system for reptiles and amphibians jointly was started, although there are some clues to that' (p. 76). In addition, he recognises (p. 77) that 'the name *Test. dussumieri*, mentioned by Temminck & Schlegel (1834) and Gray (1831 b) does not appear in the register or on the label'. Nonetheless, he (BZN 68: 72–77) continues to defend his earlier claim that the specimen's locality is unequivocally known. The basis for his assertion now rests on Temminck & Schlegel's (1834) above-quoted statement, although Hoogmoed acknowledges that the source of this is unknown. Hoogmoed fixedly disregards, among other things, a fundamental point explained by Matyot (BZN 66: 352): there is no evidence that Dussumier ever visited Aldabra atoll, or that he provided any collections from Aldabra.

Hoogmoed's faith in the purported provenance of the specimen based on a passage made years after the original description might be understandable if there were no contradictory evidence. If Temminck & Schlegel's account were consistent with the localities reported by Dussumier and/or records of his specimens in the institution where his collections were originally received (Paris Museum), it would help build a case for the locality of the lectotype. However, Temminck & Schlegel's statement stands alone and in contrast to historic information about Dussumier's itineraries and collections. As much as Temminck & Schlegel (1834) give an authoritative account of what was known of chelonians at that time, Hoogmoed does not consider the dangers of erroneous documentation, a problem that has happened too many times in the past to be ignored – regardless of the scientific authority. This would not

be the first time Temminck's name has been associated with incorrect localities and erroneous data regarding Dussumier's travels. Desmarest (1826, pp. 215–216), reviewing Temminck's *Monographie de Mammalogies*, drew attention to several such mistakes: 'M. Temminck a été mal informé, pour l'indication des localités qu'il attribue aux animaux qu'il décrit, ou pour celle des lieux où il fait aller les voyageurs naturalistes. . . . c'est ainsi qu'il fait voyager dans ces îles {les îles Mariannes} M. Dussumier, quoique ce négociant n'y soit jamais allé. . .' ['Mr. Temminck has been misinformed regarding the localities that he attributes to the animals he describes, or the places that he claims the naturalist-travellers called at. . . it is thus that he claims Mr. Dussumier travelled to these islands {the Marianas}, whereas this merchant never went there. . .']. Moreover, Temminck is known to have made other serious mistakes in specimen localities and other associated data, some of which were described by Chris Smeenk, former Curator of Mammals of the Leiden Museum. Smeenk (2009) did a detailed evaluation of historic and bibliographic information concerning one of Captain Cook's Australian possums *Pseudocheirus peregrinus* (Boddaert, 1785) and he stated flatly (p. 733): 'Temminck (1824) has added to the confusion', explaining several errors and the evident confounding of collectors and localities by this 19th century ornithologist. Smeenk's summary remark (p. 737) is critical: 'In this connection, it should be emphasized that many, if not most, early specimens in the Leiden Museum are insufficiently documented.'

Were RMNH 3231 just any specimen, the uncertainty about the locality might not be so important, but this is a lectotype, designated by opponents of Case 3463 to be the name-bearing type of the Aldabra tortoise. It hardly needs explaining further the tremendous, and unnecessary, confusion that would be caused by using a name-bearing type that has an uncertain provenance – worse yet if it turned out to have a locality totally inappropriate to the taxon in question. Myriad biological studies have faced serious problems for having relied on erroneous specimen documentation (e.g. Rasmussen & Prys-Jones, 2003; Boessenkool et al., 2010).

As Dunn & Stuart (1951, p. 677) eloquently explained: 'Just as reexamination of a type specimen may bring to light errors in the original description or characters not mentioned in it, so reexamination of the data accompanying the type specimen or related to it (original labels, collector's notes, or itineraries, etc.) may add precision to or even alter the type locality as given in the original description.' Article 76.2 of the Code makes it very clear that the precise locality of a lectotype is determined by the place of origin, not necessarily previously published statements. More and more speculations about what might, or might not, have happened to RMNH 3231 will not turn an equivocal locality into a known fact.

The identity of the lectotype of *Testudo dussumieri* Gray, 1831

With the evidence that Dussumier's tortoise was most likely collected in the granitic Seychelles at a time when the native tortoises were still extant, or possibly in the Mascarene Islands to where both Seychelles and Aldabra tortoises had been shipped, its taxonomic identity cannot be assumed. To date, no one who has declared that the lectotype is an Aldabra tortoise has provided a single basic measurement, much less a description of the diagnostic characters used to distinguish it from extinct Seychelles tortoise taxa.

Austin et al. (2003) have done the only genetic study on RMNH 3231, based on a 336-bp fragment of mtDNA. They reported this specimen as haplotype B, with two nucleotide substitutions from the common haplotype A of the Aldabra tortoise; out of the 37 non-Madagascan specimens on which they reported, RMNH 3231 has a unique haplotype. Although this does not prove that the lectotype is from a different lineage, it contrasts with the lack of genetic variation in 915-pb fragments of mtDNA that Balmer et al. (2010) found in a sample of 112 tortoises on Aldabra. Notably, while Austin et al. concluded (p. 1422), with very careful language, that ‘the mtDNA of non-Madagascan *Aldabrachelys* studied here suggests that only a single species may be involved’ they preceded (p. 1421) this with the caveat: ‘there may have been some sampling of extinct lineages.’ Aware that information on genetic diversity of western Indian Ocean tortoise populations – particularly the extinct granitic Seychelles lineage(s) – is poorly known, Austin et al. were cautious about over-extending the interpretation of their results and making dogmatic statements. Contrary to Hoogmoed’s claim that the genetic research proves that the lectotype is an Aldabra tortoise, what is known to date of non-Madagascan *Aldabrachelys* haplotypes is not sufficient for distinguishing closely related lineages or specimen provenance (Austin in litt. 27 April 2011). Hence, the taxonomic identity of the lectotype remains unresolved.

Conclusion

The absence of an unequivocal locality defeats the supposed scientific value of RMNH 3231 as a name-bearing type for the Aldabra tortoise. Taken together with the uncertain taxonomic identity, the designation of this specimen as the name-bearing type for the Aldabra tortoise, and the continued use of the binomen, would only encourage debate, discord, and nomenclatural instability, incompatible with the primary objective of the Code: nomenclatural stability and universality.

Additional references

- Balmer, O., Ciofi, C., Galbraith, D.A., Swingland, I.R., Zug, G.R. & Caccone, A. 2010. Population genetic structure of Aldabra giant tortoises. *Journal of Heredity*, **102**(1): 29–37.
- Boessenkool, S., Star, B., Scofield, R.P., Seddon, P.J. & Waters, J.M. 2010. Lost in translation or deliberate falsification? Genetic analyses reveal erroneous museum data for historic penguin specimens. *Proceedings of the Royal Society, B*, **227**: 1057–1064.
- Desmarest, A.-G. 1826. [Note no. 193 in the ‘Zoologie’ section – review of Monographie de Mammalogies by C.-J. Temminck (1824)]. *Bulletin des sciences naturelles et de géologie*, **9**: 215–224.
- Dunn, E.R. & Stuart, L.C. 1951. On the legality of restriction of type locality. *Science*, **113** (2946): 677–678.
- Rasmussen, P.C. & Prys-Jones, R.P. 2003. History vs mystery: the reliability of museum specimen data. *Bulletin of the British Ornithologists’ Club Supplement*, **123A**: 66–94.
- Smeenk, C. 2009. Has one of Captain Cook’s possums landed in Leiden? The possible holotype of *Pseudocheirus peregrinus* (Boddaert, 1785). *Zoologische Mededelingen*, **83**: 723–740.
- Toussaint, A. 1965. Le trafic commercial des Seychelles de 1773 à 1810. *Journal of the Seychelles Society*, **4**: 20–61 (reproduced as “Annexe III”. Pp. 458–485 in Toussaint, A. 1967. *La route des îles: contribution à l’histoire maritime des Mascareignes*. S.E.V.P.E.N., Paris.)

Comment on the proposed conservation of the specific name of *Cyclodina aenea* Girard, 1857 (currently *Oligosoma aeneum*; Reptilia, Squamata, SCINCIDAE) and suppression of the senior subjective synonym *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum*)

(Case 3510; see BZN 67: 307–313)

Rodney A. Hitchmough

Species and Ecosystems Unit, R & D, Department of Conservation, P O Box 10–420, Wellington 6143, New Zealand (e-mail: rhitchmough@doc.govt.nz)

Geoffrey B. Patterson

*149 Mairangi Rd, Wilton, Wellington 6012, New Zealand
(e-mail: geoffjoss@clear.net.nz)*

Although our case proposed the suppression of the name *Tiliqua ornata* Gray, 1843, in the light of subsequent discussions we have decided that the most important objective is to conserve the current usage of the names of the two skinks in question and that this could best be achieved by using a different approach. If a specimen of the ornate skink were to be designated as neotype under Article 75.6 of the Code to replace the holotype of *Oligosoma ornatum* (which is, in fact, a copper skink) then the current usage of the names of both *Oligosoma ornatum* and *O. aeneum* would be conserved.

We consider that the specimen referred to as a ‘homotype’ (possibly a misspelling of homeotype?) by Hardy (1977) for *Cyclodina ornata* – NMNZ RE.002457 (formerly NMNZ R.1815 and ED S.912), collected at Manakau, Horowhenua, by A.H. Whitaker, 7 September 1971, is indeed an example of the ornate skink and would therefore be a suitable neotype, thus conserving the current usage of both the scientific and vernacular names for this taxon.

Consequently we would like to withdraw our previous proposal and, instead, the International Commission on Zoological Nomenclature is accordingly asked:

- (1) to set aside the existing holotype of *Tiliqua ornata* Gray, 1843 and to designate as neotype specimen NMNZ RE.002457 (formerly NMNZ R.1815 and ED S.912) in the National Museum of New Zealand, Wellington, collected at Manakau, Horowhenua, by A.H. Whitaker, 7 September 1971;
- (2) to place on the Official List of Specific Names in Zoology the name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, and as defined by the neotype designated in (1) above.

Erratum

The heading in BZN 67: 326 that reads ‘People who support summary comment on Case 3463 (list compiled between 14 and 3 November 2010)’ should read: ‘People who support the above summary comment on Case 3463 (list compiled between 14 October and 3 November 2010)’.

OPINION 2271 (Case 3481)***Crioceris quadripunctata* Olivier, 1808 (currently *Petauristes quadripunctatus*; Insecta, Coleoptera): specific name conserved**

Abstract. The Commission has conserved the name *Petauristes quadripunctatus* (Olivier, 1808) for a common and widespread South Asian beetle originally described as *Crioceris quadripunctata*, by ruling that it is not invalid by reason of being a junior primary homonym of *Crioceris quadripunctata* Fabricius, 1801 (currently *Monolepta quadripunctata*).

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; CHRYSOMELIDAE; *Petauristes*; *Petauristes quadripunctatus*; Southern Asia.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *quadripunctata* Olivier, 1808, as published in the binomen *Crioceris quadripunctata*, is not invalid by reason of being a junior primary homonym of *quadripunctata* Fabricius, 1801, as published in the binomen *Crioceris quadripunctata*.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *quadripunctata* Fabricius, 1801, as published in the binomen *Crioceris quadripunctata*;
 - (b) *quadripunctata* Olivier, 1808, as published in the binomen *Crioceris quadripunctata*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *quadripunctata* Fabricius, 1801, as published in the binomen *Crioceris quadripunctata*, as ruled in (1) above.

History of Case 3481

An application to conserve the use of the name *Petauristes quadripunctatus* (Olivier, 1808) for a common and widespread South Asian beetle originally described as *Crioceris quadripunctata*, and thus a junior primary homonym of *Crioceris quadripunctata* Fabricius, 1801 (currently *Monolepta quadripunctata*), was received from Hans Silfverberg (*Finnish Museum of Natural History, Zoological Museum, Helsinki University, Helsinki, Finland*) on 24 October 2008. After correspondence the case was published in BZN 66: 317–319 (December 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 318. At the close of the voting period on 1 March 2011 the votes were as follows:

Affirmative votes – 23: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 2: Lamas and Zhang.

Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting FOR, Harvey commented that, although he felt the case was relatively straightforward and he supported the application to maintain existing usage of the junior homonym, he advised that details of any existing type specimens of both *Crioceris quadripunctata* Fabricius, 1801 and *Crioceris quadripunctata* Olivier, 1808 should be supplied to verify current taxonomic placements. Also voting FOR, Kottelat said that the application referred to Article 23.9.5, which says that ‘the case *should* be referred to the Commission’ in the English version of the Code. However, the French version says that ‘[the author] *may* submit the case to the Commission’, which has different implications.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

quadripunctata, *Crioceris*, Fabricius, 1801, *Systema Eleutheratorum*. Tomus II. Kiliae, p. 460.
quadripunctata, *Crioceris*, Olivier, 1808, *Entomologie, ou Histoire Naturelle des Insectes. Coléoptères*. Tome sixième, Paris, Chez Desray, p. 731.

OPINION 2272 (Case 3484)**NOMIIDAE Gozis, 1875 (Insecta, Coleoptera): spelling emended to NOMIUSIDAE to remove homonymy with NOMIINAE Robertson, 1904 (Insecta, Hymenoptera)**

Abstract. The Commission has ruled that homonymy between the Coleoptera family-group name NOMIIDAE Gozis, 1875 (type genus *Nomius* Laporte, 1835) and Hymenoptera family-group name NOMIINAE Robertson, 1904 (type genus *Nomia* Latreille, 1804) be removed by changing the spelling of the senior name (the entire generic name of *Nomius* is used to form NOMIUSIDAE), while the hymenopteran family-group name (based on *Nomia* Latreille, 1804) remains unaltered.

Keywords. Nomenclature; taxonomy; Hymenoptera; Coleoptera; CARABIDAE; NOMIIDAE; NOMIINAE; NOMIUSIDAE; *Nomia*; *Nomius*; *Nomia curvipes*; *Nomius graecus*; *Morio pygmaeus*; ground beetles; sweat bee; Nearctic; Palaearctic; Afrotropical; Asia; Australia.

Ruling

- (1) Under the plenary power it is hereby ruled that for the purposes of Article 29 of the Code the stem of the generic name *Nomius* Laporte, 1835 is *Nomius*–.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Nomius* Laporte, 1835 (gender: masculine), type species by monotypy *Nomius graecus* Laporte, 1835;
 - (b) *Nomia* Latreille, 1804 (gender: feminine), type species by monotypy *Andrena curvipes* Fabricius, 1781.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *pygmaeus* Dejean, 1831, as published in the binomen *Morio pygmaeus* (senior subjective synonym of *Nomius graecus* Laporte, 1835, valid specific name of the type species of *Nomius* Laporte, 1835);
 - (b) *curvipes* Fabricius, 1781, as published in the binomen *Andrena curvipes* (specific name of the type species of *Nomia* Latreille, 1804).
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) NOMIUSIDAE Gozis, 1875, type genus *Nomius* Laporte, 1835 (spelling emended by the ruling in (1) above) (Insecta, Coleoptera);
 - (b) NOMIINAE Robertson, 1904, type genus *Nomia* Latreille, 1804 (Insecta, Hymenoptera).
- (5) The name NOMIIDAE Gozis, 1875 (spelling emended to NOMIUSIDAE, as ruled in (1) above) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology (Insecta, Coleoptera).

History of Case 3484

An application to remove homonymy between the family-group name NOMIIDAE Gozis, 1875 (Insecta, Coleoptera), a senior homonym of NOMIINAE Robertson, 1904 (Insecta, Hymenoptera), long-considered to be a synonym of PSYDRINA LeConte, 1853, by emending the stem of the generic name *Nomius* Laporte, 1835 on which the beetle family-group name is based, to give NOMIUSIDAE, was received from Michael S. Engel (*University of Kansas, Lawrence, KS, U.S.A.*) and Patrice Bouchard (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, ON, Canada*) on 15 December 2008. After correspondence the case was published in BZN 66: 30–33 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 1 March 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 31. At the close of the voting period on 1 June 2010 the votes were as follows:

Affirmative votes – 22: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Lamas, Lim, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 2: Alonso-Zarazaga and Kullander.

Split vote: Kottelat voted FOR proposals (1), (2), (3)(b), (4) and AGAINST (3)(a) and (5).

Kojima abstained. Pyle and Zhang were on leave of absence.

Voting AGAINST, Alonso-Zarazaga said he felt that the authors should have respected the Principle of Priority and not affected the name NOMIIDAE Gozis, 1875, which is perfectly constructed. In his view a more acceptable proposal would have requested modification of NOMIIDAE Robertson, 1904, which is a later name, to NOMIAIDAE. Also voting AGAINST, Kullander said that the proposal did not explain the etymology of *Nomius* or *Nomia*, which might have provided more options for family names. Kottelat explained his split votes AGAINST in detail. He voted AGAINST (3)(a) because *pygmaeus* is not the type species of *Nomius*; the type species is *graecus*, as stated in (2)(a), suggesting that *graecus* should be the name placed on the Official List; he voted AGAINST proposal (5) because after the decision in (1) NOMIIDAE Gozis is not a name but an erroneous original spelling of NOMIUSIDAE Gozis. Logically and semantically, a name cannot be at the same time listed as a valid name under one spelling and as an invalid name under another spelling. It is one or the other, but not both. This is a gross confusion of the words 'name' and 'spelling', as explained in the ICZN Glossary. And as the Indexes of Names and Lists of Names are for listing names, spellings cannot and should not be listed. Kojima ABSTAINED, saying that suppression of NOMIIDAE Gozis, 1875 could be a simpler solution.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

curvipes, *Andrena*, Fabricius, 1781, *Species insectorum, exhibentes eorum differentias specificas, synonyma auctorum, loca natalia, metamorphosin, adjectis observationibus, descriptionibus*, p. 182.

Nomia Latreille, 1804, *Nouveau Dictionnaire d'Histoire Naturelle, appliquée aux arts, principalement à l'agriculture et à l'économie rurale et domestique*, Tome 24 [vol. 24], p. 182.

NOMIIDAE Gozis, 1875, *Catalogue des coléoptères de France et de la fauna Gallo-Rhénane*, 2, p. 3.

NOMIINAE Robertson, 1904, *Canadian Entomologist*, **36**: 42.

Nomius Laporte, 1835, *Études entomologiques, ou descriptions d'insectes nouveaux; et observations sur leur synonymie*, p. 144.

NOMIUSIDAE Gozis, 1875, *Catalogue des coléoptères de France et de la fauna Gallo-Rhénane*, 2, p. 3.

pygmaeus, *Morio*, Dejean, 1831, *Species général des coléoptères, de la collection de M. le Comte Dejean. Tome cinquième*, p. 512.

OPINION 2273 (Case 3497)***Cyphon palustris* Thomson, 1855 (Insecta, Coleoptera): specific name conserved**

Abstract. The Commission has conserved the specific name of the widespread Palaearctic marsh beetle *Cyphon palustris* Thomson, 1855 (SCIRTIDAE), published as a junior primary homonym of *Cyphon palustris* Germar, 1818 (currently *Eubria palustris*, PSEPHENIDAE) by ruling it to be not invalid by reason of being a junior primary homonym.

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; SCIRTIDAE; PSEPHENIDAE; *Cyphon*; *Eubria*; *Cyphon palustris*; *Eubria palustris*; marsh beetles; water penny beetles; Palaearctis.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *palustris* Thomson, 1855, as published in the binomen *Cyphon palustris*, is not invalid by reason of being a junior primary homonym of *palustris* Germar, 1818, as published in the binomen *Cyphon palustris*.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *palustris* Thomson, 1855, as published in the binomen *Cyphon palustris* (with the endorsement that it is not invalid by reason of being a junior primary homonym of *palustris* Germar, 1818, as published in the binomen *Cyphon palustris*, as ruled in (1) above);
 - (b) *palustris* Germar, 1818, as published in the binomen *Cyphon palustris*.

History of Case 3497

An application to conserve the specific name of the widespread Palaearctic marsh beetle *Cyphon palustris* Thomson, 1855 (SCIRTIDAE), published as a junior primary homonym of *Cyphon palustris* Germar, 1818 (currently *Eubria palustris*, PSEPHENIDAE) by ruling it to be not invalid by reason of being a junior primary homonym was received from Oscar Vorst (*National Museum of Natural History, Naturalis, Leiden, The Netherlands*) on 25 June 2009. After correspondence the case was published in BZN 66: 323–326 (December 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 324. At the close of the voting period on 1 March 2011 the votes were as follows:

Affirmative votes – 24: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Minelli, Lamas, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Lim.

Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting FOR, Grygier said he cannot understand what is meant by the word ‘available’ cited in paragraph 1 in the Case, as in this context, Article 11.9.3.6 has nothing to do with the ‘availability’ of the transfer of a nominal species from one genus to another; in fact, the concept of ‘availability’ is inapplicable to such transfers.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

palustris, *Cyphon*, Thomson, 1855, *Öfversigt af Kongliga Vetenskaps-Akademiens Förhandlingar*, **12**: 320.

palustris, *Cyphon*, Germar, 1818, *Magazin der Entomologie (Germar)*, **3**: 238.

OPINION 2274 (Case 3455)***Pseudobagrus* Bleeker, 1859 (Osteichthyes, Siluriformes, BAGRIDAE): conservation by suppression of a senior synonym not approved**

Abstract. An application to conserve the generic name *Pseudobagrus* Bleeker, 1859 for a group of bagrid catfishes (order Siluriformes) by suppressing the senior name *Tachysurus* La Cepède, 1803, was not approved by the Commission.

Keywords. Nomenclature; taxonomy; BAGRIDAE; *Pseudobagrus*; *Tachysurus*; *Pseudobagrus fulvidraco*; *Tachysurus sinensis*; catfish; China.

Ruling

- (1) It is hereby ruled that the following names are not suppressed:
 - (a) *Tachysurus* La Cepède, 1803;
 - (b) *sinensis* La Cepède, 1803, as published in the binomen *Tachysurus sinensis* (specific name of the type species of *Tachysurus* La Cepède, 1803).
- (2) No names are placed on Official Lists or Indexes and the issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

History of Case 3455

An application to conserve the generic name *Pseudobagrus* Bleeker, 1859 for a group of bagrid catfishes (order Siluriformes) by suppressing the senior name *Tachysurus* La Cepède, 1803, was received from J. Andrés López (*Florida Museum of Natural History, University of Florida, Gainesville, Florida 32611, U.S.A.*), E. Zhang and J-L. Cheng (*Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan, Hubei Province, China*) on 13 March 2008. After correspondence the case was published in BZN 65: 202–204 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. An adverse comment was published in BZN 67: 68–71.

Decision of the Commission

On 1 December 2010 the members of the Commission were invited to vote on the proposals published in BZN 65: 203–204. At the close of the voting period on 1 March 2011, the results were as follows:

Affirmative votes – 5: Bouchet, Grygier, Halliday, Papp and Yanega.

Negative votes – 18: Ballerio, Brothers, Fautin, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Pape, Patterson, Rosenberg, Štys, van Tol, Winston and Zhang.

Bogutskaya and Zhou abstained. Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting AGAINST, Brothers said that requesting the suppression of one of two names, both of which are stated to be widely used for different taxa, would seem to

defeat any aim to promote stability, and result in a solution little different from that supposedly being countered, merely favouring the other name. Also voting AGAINST, Kojima commented that the identity of *Tachysurus sinensis* La Cepède, 1803 is now unambiguous, as its neotype has been designated by Ng & Kottelat (2007), and therefore the genus *Tachysurus* is well defined. Štys, voting AGAINST, said he agreed with the arguments provided in the comment by Ng & Kottelat (2010).

Voting FOR, Yanega said that this case asked the Commission, in effect, to weigh which of two actions is more important to nomenclature; the fixation via type designation of a single previously extremely ambiguous name based solely upon an illustration, versus the generic placement of a large number of species. Clearly, the less disruptive alternative is to eliminate the name *Tachysurus*, rather than resurrecting it and giving it priority over other long-established and well-characterised names. *Tachysurus* may well be the correct name, following the Code, but sometimes stability takes precedence; while the scholarship and argumentation behind it is commendable, the end result of resurrecting *Tachysurus* is unfavourable, and thus contrary to the overall aims of the Code.

OPINION 2275 (Case 3491)***Podargus cornutus* Temminck, 1822 (currently *Batrachostomus cornutus*; Aves, PODARGIDAE): specific name conserved by designation of a neotype**

Abstract. The Commission has conserved the accustomed usage of the name *cornutus* Temminck, 1822 for the Sumatran population of the southeast Asian species currently named *Batrachostomus javensis* (Horsfield, 1821) (Aves, PODARGIDAE) by ruling that the name *Podargus cornutus* was proposed by Temminck (1822) for a new taxon, rather than as a replacement name for *Podargus javensis* Horsfield, 1821. The Commission has designated a neotype for *Podargus cornutus* Temminck, 1822.

Keywords. Nomenclature; taxonomy; Aves; PODARGIDAE; *Batrachostomus*; *Podargus*; *Batrachostomus javensis*; *Batrachostomus cornutus*; frogmouth; Java; Sumatra.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *Podargus cornutus* was proposed by Temminck (1822) for a new taxon, rather than as a replacement name for *Podargus javensis* Horsfield, 1821.
- (2) The specimen in Muséum National d'Histoire Naturelle, Paris (MNHN), C.G. 2004–45 (A.C. Ancien Catalog: 5221) is hereby designated as neotype of *Podargus cornutus* Temminck, 1822, as deemed available in (1) above.
- (3) The name *cornutus* Temminck, 1822, as published in the binomen *Podargus cornutus*, as deemed available in (1) above and as defined by the neotype in the Muséum National d'Histoire Naturelle, Paris (MNHN), C.G. 2004–45 (A.C. Ancien Catalog: 5221) is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3491

An application to conserve the accustomed usage of the name *cornutus* Temminck, 1822 for the Sumatran population of the southeast Asian species currently named *Batrachostomus javensis* (Horsfield, 1821) (Aves, PODARGIDAE), was received from Nigel Cleere (*Upper Bucklebury, Berkshire, U.K.*), Edward C. Dickinson (*Eastbourne, East Sussex, U.K.*), Jean-François Voisin and Claire Voisin (*Muséum National d'Histoire Naturelle, Paris, France*) on 12 March 2009. After correspondence the case was published in BZN 66: 327–331 (December 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 329–330. At the close of the voting period on 1 March 2011 the votes were as follows:

Affirmative votes – 18: Bouchet, Brothers, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston and Yanega.

Negative votes – 3: Grygier, Zhang and Zhou.

Ballerio, Bogutskaya, Kullander and Lim abstained. Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Brothers commented that he voted FOR the proposals in principle, despite some perceived shortcomings in their detail. He felt that it was questionable whether Article 75.6 was applicable for this case; the issue seemed actually to be the status of the name *cornutus* Temminck as a replacement name and therefore an objective synonym of *javensis* Horsfield, and a request to change that status, followed by the designation of an appropriate type specimen for it. Articles 78.1 and 81.1 of the Code seemed the most appropriate to invoke. The designation of a ‘neotype’ under such circumstances also seemed inappropriate; the specimen involved should rather be called the ‘holotype’ since this is the term used by Temminck for his description. Also voting FOR, Yanega felt that the case did not thoroughly cover all of the pertinent portions of the Code and how they would apply; accordingly, it was not immediately obvious, nor easy to appreciate how the Commission should or should not act. He felt that ultimately stability would be properly served if the petition were granted. Temminck clearly did not intend to describe a new taxon, but did so anyway, and a positive decision by the Commission would finally validate this, rectifying the discrepancy between Code-compliance and present usage.

Grygier voted AGAINST, explaining that there is an important point concerning name-bearing types of new replacement names for species-group taxa that was not clearly made in the case. At present, under Article 72.7, the Tring specimen of *Podargus javensis* is the holotype of both that nominal species and *P. cornutus*, and the Paris specimen of *P. cornutus* is not a name-bearing type. Under this circumstance, bringing the present case under Article 75.6 is appropriate. However, the first part of the proposed solution leads to a situation in which Article 75.6 no longer applies. If *P. cornutus* of Temminck is declared to be a new taxon, and not a replacement name, then its type series retroactively will have consisted of both specimens assigned to that species by Temminck, i.e. two extant syntypes. The second part of the proposed solution would thus require naming an extant syntype as a neotype, which seems improbable by definition. The second part of the present proposals should instead have asked for the restriction of the type series of *P. cornutus* to just the Paris specimen, which would then indeed be the holotype, as Cleere et al. (2006) mistakenly claimed.

Original reference

The following is the original reference to the name placed on Official Lists by the ruling given in the present Opinion:

cornutus, *Podargus*, Temminck, 1822, in Temminck C.J. & Laugier, M. of *Nouveau recueil de planches coloriées d'oiseaux, pour servir de suite et de complément aux planches enluminées de Buffon*. Livraison 27, text for Plate 159.

OPINION 2276 (Case 3479)***Cuvieronius* Osborn, 1923 (Mammalia, Proboscidea): usage conserved by designation of a type species**

Abstract. The generic name *Cuvieronius* Osborn, 1923, for South American gomphotheriid proboscideans, has been conserved by setting aside all previous type species fixations and designating *Mastotherium hyodon* Fischer, 1814 as the type species of *Cuvieronius* and by designating a neotype for that species.

Keywords. Nomenclature; taxonomy; Mammalia; Proboscidea; GOMPHOTHERIIDAE; Brazil; *Cuvieronius*; *Mastotherium hyodon*; *Cuvieronius tarijensis*; South America; Ecuador; Chile.

Ruling

- (1) Under the plenary power:
 - (a) it is hereby ruled that all previous type species fixations for *Cuvieronius* Osborn, 1923 are set aside and *Mastotherium hyodon* Fischer, 1814 is designated as the type species;
 - (b) the Commission hereby sets aside all previous type fixations for *Mastotherium hyodon* Fischer, 1814 and designates the skull and lower jaw from Tarija, Bolivia originally described and illustrated by Boule & Thevenin (1920, pls. 1–3): MNHN TAR 1270 (Musée National d'Histoire Naturelle, Paris) as neotype of *Mastotherium hyodon*.
- (2) The name *Cuvieronius* Osborn, 1923 (gender: masculine), type species *Mastotherium hyodon* Fischer, 1814, as ruled in (1)(a) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *hyodon*, as published in the binomen *Mastotherium hyodon* Fischer, 1814 (specific name of the type species of *Cuvieronius* Osborn, 1923) as defined by the neotype designated in (1)(b) above, is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3479

An application to conserve the generic name *Cuvieronius* Osborn, 1923, for extinct South American gomphotheriid proboscideans, by setting aside all previous type species fixations and designating *Mastotherium hyodon* Fischer, 1814 as the type species of *Cuvieronius* and by designating a neotype for that species was received from Spencer G. Lucas (*New Mexico Museum of Natural History, Albuquerque, NM, U.S.A.*) on 15 October 2008. After correspondence the case was published in BZN 66: 265–270 (September 2009). The title, abstract and keywords of the case were published on the Commission's website. One comment in support was published in BZN 67: 95–96.

Decision of the Commission

On 1 September 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 267. At the close of the voting period on 1 December 2010 the votes were as follows:

Affirmative votes – 19: Bouchet, Brothers, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Pape, Papp, Patterson, Rosenberg, van Tol, Yanega, Zhang and Zhou.

Negative votes – 5: Ballerio, Bogutskaya, Grygier, Minelli and Winston.

Štys abstained. Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting FOR Halliday commented that the proposal presented in case 3479 was persuasive and should be effective in stabilising the names of the taxa concerned. He felt, however, that one further action was needed for a complete solution to the problem: the Commission must explicitly set aside the existing holotype of *hyodon*, invoking Article 75.5, before designating specimen number MNHN TAR 1270 as the neotype of *hyodon*. He felt this request should have been included in the Case.

Voting AGAINST, Bogutskaya suggested that a better solution to the problems that surround *Cuvieronius* that would promote the stability and universality of nomenclature was to keep *M. humboldtii* Fisher, 1814 as the type species of *Cuvieronius* and designate as its neotype the skull and lower jaw from Tarija, Bolivia: MNHN TAR 1270 (holotype of *C. tarijensis*). This would provide the same result, but with no replacement of the type species of *Cuvieronius*. Minelli, voting AGAINST, said that fixing the concept of the type species of *Cuvieronius* Osborn, 1923 by replacing the poor type material of the oldest nominal taxa involved in the case is a sensible choice. However, this does not require setting aside all previous type species fixations for *Cuvieronius* Osborn, 1923, to allow designating *Mastotherium hyodon* Fischer, 1814, as the type species. A simpler solution, not affecting the original type species fixation, would be to fix the specimen from Tarija MNHN TAR 1270 as neotype of *Mastotherium humboldtii* Fischer, 1814. Also voting AGAINST, Grygier advocated that if there was any possibility of obtaining and matching fragmentary gene sequences from the holotype tooth of *hyodon* Fischer and well-characterised fossils of *Cuvieronius* and *Haplomastodon*, we should wait for such data. If not, this unidentifiable-to-taxonomic-genus tooth was the main thing needing resolution. Two ways were available to accomplish this, both with problems. The current proposal represented one approach. However, the long-term preponderant usage of *hyodon* and the acceptance of Cabrera's invalid type-species designation have evidently occurred in relatively few works (only about 30 are cited, by relatively few authors), and the proposed type locality is distant from the original type locality. Another possible solution, which he slightly favoured because it did not involve endorsement of earlier repeated mistakes, was conditional suppression of *humboldtii* Fischer and *hyodon* in favour of the currently best-understood name *tarijensis* Ficcarelli et al., designation of the latter as the type species of *Cuvieronius*, and full suppression of *andium* Cuvier, 1824 (*humboldtii* Cuvier, 1824, being invalid as both an objective junior synonym and secondary junior homonym of *humboldtii* Fischer, 1814 does not require suppression). Grygier said that designating *tarijensis* as the type might be regarded as one step too far, but in both solutions the same individual, whether it be called the holotype of *tarijensis* or the neotype of *hyodon*, would become central to the concept of the genus. As an aside, there is an inconsistency concerning the original locality of Cuvier's *humboldtii*: paragraph 1 states that it was from Chile, but paragraph 8 says the type specimen was from 'either Chile or Ecuador near Concepcion'. While there is a city called Concepcion in Chile, there is apparently no such municipality in Ecuador. Also, the Case was brought under Articles 68 and 75,

but it should have been brought under Articles 75.5 and 81.1; Article 68 does not require anything to be referred to the Commission.

Štys ABSTAINED, with the criticism that he felt the Case was poorly presented, with many irrelevant details, the present taxonomic situations not clearly outlined, and that the reader was not unambiguously told what would happen if all the illegitimate nomenclatural actions would be simply ignored (as they should have been).

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Cuvieronius Osborn, 1923, *American Museum Novitates*, **99**: 1.

hyodon, *Mastotherium*, Fischer von Waldheim, 1814, *Zoognosia Tabulis synopticis illustrata*, vol. 3, p. 341.

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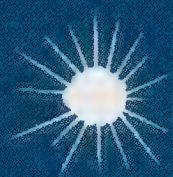
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The Bulletin of Zoological Nomenclature

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on Zoological Nomenclature

ICZN



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The Executive Secretary

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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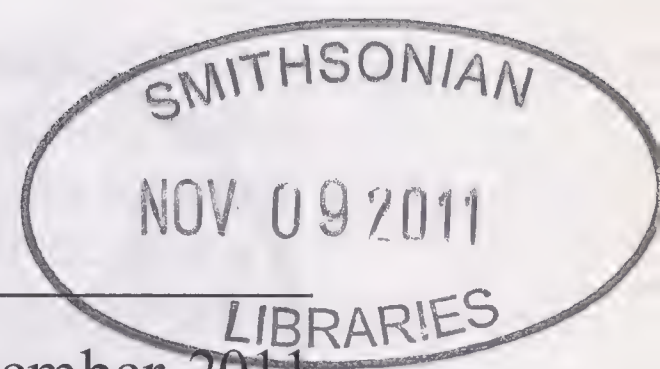
Abstracts of Applications and Opinions, Comments in full and details of the names published in the *Official Lists and Indexes of Names and Works in Zoology* are posted on the Commission's website (<http://iczn.org>)

Cover image: *Gryllotalpa gryllotalpa* (Linnaeus, 1758), the European mole cricket (Latin: *gryllus* – cricket, *talpa* – mole, from its fossorial limbs, fine hairs and subterranean habit). Widespread in the Western Palaearctic region and introduced into parts of the U.S.A. this insect can be an agricultural pest in significant numbers, although in the U.K. it is extremely rare and subject to a U.K. Biodiversity Action Plan (report sightings to g.beccaloni@nhm.ac.uk). Detail from plate 456 of *British Entomology: Original Drawings*, vol. 10, by John Curtis (1862) (© Natural History Museum, London).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 68, part 3 (pp. 159–238)

30 September 2011

**Notices**

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 68, part 2, 30 June 2011) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3567: *Bulimus lineatus* Bruguière, 1789 (currently *Macroceramus lineatus*; Gastropoda, UROCOPTIDAE) and *Bulimus lineatus* Draparnaud, 1801 (currently *Acicula lineata*; Gastropoda, ACICULIDAE): proposed conservation of both specific names. F.W. Welter-Schultes.

CASE 3568: *Stirpulina* Stoliczka, 1870 (Bivalvia, CLAVAGELLIDAE): proposed conservation by suppression of *Tubolana* Bivona Bernardi, 1832. M.E.Y. Low & S.K. Tan.

CASE 3569: *Limax fasciatus* Razoumowsky, 1789 (Gastropoda, LIMACIDAE) and *Limax fasciatus* Nilsson, 1823 (currently *Arion fasciatus*; Gastropoda, ARIONIDAE): proposed conservation of both specific names. T. von Proschwitz & G. Falkner.

CASE 3570: *Curculio scirpi* Fabricius, 1792 (Insecta, Coleoptera, CIRCULIONOIDEA, ERIRHINIDAE): proposed precedence over *Curculio rhamni* Herbst, 1784 and *C. scirpi* Rossi, 1790. R. Caldara, H. Winkelmann & M.A. Alonso-Zarazaga.

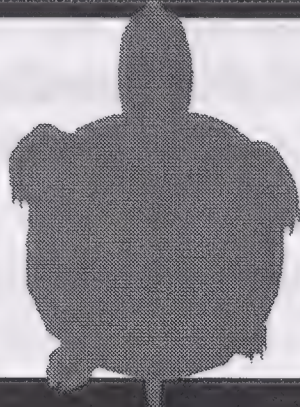
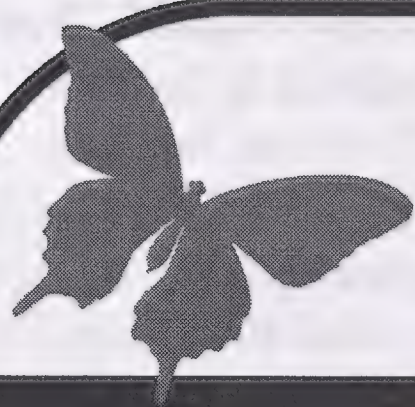
CASE 3571: *Crotalinus catenatus* Rafinesque, 1818 and *Crotalus tergeminus* Say, 1822 (Reptilia, Serpentes): proposed conservation of usage by designation of neotypes. B.I. Crother, J.M. Savage & A.T. Holycross.

CASE 3572: PSITTACULINAE Vigors, 1825 (Aves): proposed conservation of usage. R. Schodde, L. Joseph & W.J. Bock.

CASE 3573: *Papilio narcissus* Fabricius (currently *Heteropsis narcissus*; Lepidoptera, NYMPHALIDAE) and *Papilio narcissus* Fabricius, 1775 (currently *Hypochrysops*; Lepidoptera, LYCAENIDAE): request for a ruling to resolve homonymy. E. Balletto & D.C. Lees.

CASE 3574: *Cereus Ilmoni*, 1830 (Cnidaria, Anthozoa): proposed designation of a new type species. D.G. Fautin, R.B. Williams & T. Molodtsova.

CASE 3575: *Haltica undulata* Kutschera, 1860 (currently *Phyllotreta undulata*; Insecta, Coleoptera): proposed precedence over *Haltica bivittata* Waterhouse, 1838 (currently *Phyllotreta bivittata*). C. Reid, R. Booth & M. Döberl.



Charles Davies Sherborn

ANCHORING BIODIVERSITY INFORMATION: FROM SHERBORN TO THE 21ST CENTURY AND BEYOND

Charles Davies Sherborn (1861–1942) provided the bibliographic foundation for current zoological nomenclature with his magnum opus *Index Animalium*. In the 43 years he spent working on this extraordinary 11 volume, 9,000 page resource, he anchored our understanding of animal diversity through the published scientific record. No work has equalled it since, and it remains in current and critical use.

A symposium celebrating Sherborn's life and legacy will be held at the Natural History Museum on 28 October 2011, with an international panel of experts on bibliography and biodiversity informatics, linking a view of the past with an active debate on the future of these related fields.



Sherborn's personal bookplate

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Coral taxon names published in ‘Corals of the world’ by J.E.N. Veron (2000): potential availability confirmed under Article 86.1.2

The International Commission on Zoological Nomenclature received a request from J.E.N. Veron to rule upon the availability of 103 species names, one generic name and one family name.

In a monographic work on the taxonomy of scleractinian corals, Veron (2000) proposed many new names for taxa at the species-group (103 names), genus-group (two names), and family-group (one name) levels, in some cases without meeting all the new requirements for availability that went into effect when the fourth edition of the International Code of Zoological Nomenclature came into force on 1 January 2000. In particular, the descriptions of new species did not explicitly fix a holotype or syntypes as required by Articles 16.4.1 and 72.3. As a result, it has been contended that the majority, if not all, of these names are nomenclaturally unavailable as of this work, with resulting taxonomic uncertainty among zoologists. To remedy this situation, Dr Veron presented testimonial and documentary evidence to the Commission that he submitted the manuscript for publication in December 1999.

In accordance with Article 86.1.2 of the Code, the Commission was asked to confirm that these names are not to be set aside on the grounds that they do not comply with the changed provisions of the fourth edition of the Code published in 1999 and that each of these names is potentially available as of Veron (2000), provided that it meets the other provisions of the Code (i.e. Articles 10–20) related to availability.

Under the one-month rule, the Commission voted on Veron’s request. Twenty-four votes were received, all FOR the request.

It should be noted that this action validates the work but not the names per se within. It is simply a verification that the names should not be set aside provided that they meet the provisions of the third edition of the Code published in, in particular, but not limited to, Articles 10–20. The names at issue are provided in the list below, prepared by the ICZN Secretariat and modified from the Hexacorallians of the World website, <http://hercules.kgs.ku.edu/hexacoral/anemone2/index.cfm> as a convenience. However, this is not validation of taxonomic units (which is not in the purview of the Commission) nor is it a publication of a List of Available Names (LAN). The Commission has not ruled that these names are individually available and the list is thus not authoritative. It remains for subsequent workers to confirm availability of each name.

Ostensibly new taxa described in J.E.N. Veron (2000) ‘Corals of the world’

Notes

1. Misspellings have been corrected.
2. Where required, spellings of specific names have been corrected to meet the provisions of the Code regarding gender agreement.

Additional notes on gender agreement:

- *Porites* – masculine (as in Opinion 2061).
- *Favites* – masculine (Article 30.1.4.4. A compound genus-group name ending in the suffix *-ites*, *-oides*, *-ides*, *-odes*, or *-istes* is to be treated as masculine unless

its author, when establishing the name, stated that it had another gender or treated it as such by combining it with an adjectival species-group name in another gender form). The first included species in *Favites* Link, 1807 was *F. astrinus* Link, 1807.

- The specific name *napopora* is treated as a noun in apposition.

3. Species are listed under their original genus, even if later workers have moved them to other genera.

Specific names

1. *Acanthastrea faviaformis* Veron, 2000 (vol. 3, p. 24)
2. *Acanthastrea regularis* Veron, 2000 (vol. 3, p. 16)
3. *Acanthastrea subechinata* Veron, 2000 (vol. 3, p. 13)
4. *Acropora cylindrica* Veron & Fenner in Veron, 2000 (vol. 1, p. 293)
5. *Acropora elizabethensis* Veron, 2000 (vol. 1, p. 188)
6. *Acropora fenneri* Veron, 2000 (vol. 1, p. 416)
7. *Acropora filiformis* Veron, 2000 (vol. 1, p. 418)
8. *Acropora gomezi* Veron, 2000 (vol. 1, p. 408)
9. *Acropora japonica* Veron, 2000 (vol. 1, p. 330)
10. *Acropora lamarcki* Veron, 2000 (vol. 1, p. 376)
11. *Acropora maryae* Veron, 2000 (vol. 1, p. 392)
12. *Acropora minuta* Veron, 2000 (vol. 1, p. 210)
13. *Acropora navini* Veron, 2000 (vol. 1, p. 431)
14. *Acropora parahemprichii* Veron, 2000 (vol. 1, p. 274)
15. *Acropora parapharaonis* Veron, 2000 (vol. 1, p. 367)
16. *Acropora pectinata* Veron, 2000 (vol. 1, p. 264; misspelled there as *Acropora pectinatus*)
17. *Acropora proximalis* Veron, 2000 (vol. 1, p. 278)
18. *Acropora rufa* Veron, 2000 (vol. 1, p. 269; misspelled there as *Acropora rufus*)
19. *Acropora torresiana* Veron, 2000 (vol. 1, p. 316)
20. *Alveopora minuta* Veron, 2000 (vol. 3, p. 396)
21. *Anacropora pillai* Veron, 2000 (vol. 1, p. 175)
22. *Anacropora spumosa* Veron, Turak & DeVantier in Veron, 2000 (vol. 1, p. 171)
23. *Cycloseris colini* Veron, 2000 (vol. 2, p. 247)
24. *Cyphastrea hexasepta* Veron, Turak & DeVantier in Veron, 2000 (vol. 3, p. 245)
25. *Echinophyllia costata* Fenner & Veron in Veron, 2000 (vol. 3, p. 330)
26. *Echinophyllia pectinata* Veron, 2000 (vol. 3, p. 331)
27. *Echinopora irregularis* Veron, Turak & DeVantier in Veron, 2000 (vol. 3, p. 262)
28. *Echinopora robusta* Veron, 2000 (vol. 3, p. 263)
29. *Echinopora tiranensis* Veron, Turak & DeVantier in Veron, 2000 (vol. 3, p. 265)
30. *Echinophyllia taylorae* Veron, 2000 (vol. 2, p. 327) (the species *Echinopora taylorae* was erroneously described by Veron (2000) in the genus

- Echinophyllia*. Veron (2002) published the following statement 'In the original description, this species was erroneously placed in genus *Echinophyllia*').
31. *Favia albida* Veron, 2000 (vol. 3, p. 112; misspelled there as *Favia albidus*)
 32. *Favia lacuna* Veron, Turak & DeVantier in Veron, 2000 (vol. 3, p. 111)
 33. *Favia marshae* Veron, 2000 (vol. 3, p. 122)
 34. *Favia rosaria* Veron, 2000 (vol. 3, p. 119)
 35. *Favia truncata* Veron, 2000 (vol. 3, p. 113; misspelled there as *Favia truncatus*)
 36. *Favia vietnamensis* Veron, 2000 (vol. 3, p. 127)
 37. *Favites bestae* Veron, 2000 (vol. 3, p. 140)
 38. *Favites micropentagonus* Veron, 2000 (vol. 3, p. 137; misspelled there as *Favites micropentagona*)
 39. *Favites paraflexuosus* Veron, 2000 (vol. 3, p. 155; misspelled there as *Favites paraflexuosa*)
 40. *Fungia puishani* Veron & DeVantier in Veron, 2000 (vol. 2, p. 277)
 41. *Galaxea acrhelia* Veron, 2000 (vol. 2, p. 115)
 42. *Galaxea cryptoramosa* Fenner & Veron in Veron, 2000 (vol. 2, p. 114)
 43. *Galaxea longisepta* Fenner & Veron in Veron, 2000 (vol. 2, p. 116)
 44. *Goniastrea minuta* Veron, 2000 (vol. 3, p. 158)
 45. *Goniastrea ramosa* Veron, 2000 (vol. 3, p. 160)
 46. *Goniastrea thecata* Veron, DeVantier & Turak in Veron, 2000 (vol. 3, p. 169)
 47. *Goniopora albicona* Veron, DeVantier & Turak in Veron, 2000 (vol. 3, p. 361)
 48. *Goniopora ciliata* Veron, 2000 (vol. 3, p. 327)
 49. *Goniopora pearsoni* Veron, 2000 (vol. 3, p. 365)
 50. *Goniopora sultani* Veron, DeVantier & Turak in Veron, 2000 (vol. 3, p. 355)
 51. *Halomitra meierae* Veron & Maragos in Veron, 2000 (vol. 2, p. 300)
 52. *Leptastrea aequalis* Veron, 2000 (vol. 3, p. 235)
 53. *Leptoseris striata* Fenner & Veron in Veron, 2000 (vol. 2, p. 212)
 54. *Lobophyllia dentata* Veron, 2000 (vol. 3, p. 46; misspelled there as *Lobophyllia dentatus*)
 55. *Lobophyllia flabelliformis* Veron, 2000 (vol. 3, p. 48)
 56. *Lobophyllia serrata* Veron, 2000 (vol. 3, p. 41; misspelled there as *Lobophyllia serratus*)
 57. *Micromussa diminuta* Veron, 2000 (vol. 3, p. 9)
 58. *Montastraea colemani* Veron, 2000 (vol. 3, p. 219; misspelled there as *Montastrea colemani*)
 59. *Montastraea serageldini* Veron, 2000 (vol. 3, p. 213; misspelled there as *Montastrea serageldini*)
 60. *Montipora aspergilla* Veron, DeVantier & Turak in Veron, 2000 (vol. 3, p. 167)
 61. *Montipora crypta* Turak, DeVantier & Veron in Veron, 2000 (vol. 1, p. 126)
 62. *Montipora delicatula* Veron, 2000 (vol. 1, p. 70)
 63. *Montipora echinata* Veron, DeVantier & Turak in Veron, 2000 (vol. 1, p. 166)
 64. *Montipora hemispherica* Veron, 2000 (vol. 1, p. 147)
 65. *Montipora hodgsoni* Veron, 2000 (vol. 1, p. 72)

66. *Montipora kellyi* Veron, 2000 (vol. 1, p. 164)
67. *Montipora niugini* Veron, 2000 (vol. 1, p. 158)
68. *Montipora pachytuberculata* Veron, DeVantier & Turak in Veron, 2000 (vol. 1, p. 166)
69. *Montipora palawanensis* Veron, 2000 (vol. 1, p. 132)
70. *Montipora porites* Veron, 2000 (vol. 1, p. 162)
71. *Montipora saudii* Turak, DeVantier & Veron in Veron, 2000 (vol. 1, p. 92)
72. *Montipora taiwanensis* Veron, 2000 (vol. 1, p. 132)
73. *Montipora verruculosa* Veron, 2000 (vol. 1, p. 136; misspelled there as *Montipora verruculosus*)
74. *Montipora vietnamensis* Veron, 2000 (vol. 3, p. 127)
75. *Mycedium steeni* Veron, 2000 (vol. 2, p. 347)
76. *Mycedium umbra* Veron, 2000 (vol. 2, p. 342)
77. *Oxypora convoluta* Veron, 2000 (vol. 2, p. 340)
78. *Oxypora egyptensis* Veron, 2000 (vol. 2, p. 341)
79. *Parasimplastrea sheppardi* Veron, 2000 (vol. 3, p. 230)
80. *Pectinia africana* Veron, 2000 (vol. 2, p. 353; misspelled there as *Pectinia africanus*)
81. *Pectinia pygmaea* Veron, 2000 (vol. 2, p. 361; misspelled there as *Pectinia pygmaeus*)
82. *Platygyra acuta* Veron, 2000 (vol. 3, p. 190)
83. *Platygyra carnosa* Veron, 2000 (vol. 3, p. 184; misspelled there as *Platygyra carnosus*)
84. *Plerogyra disca* Veron & Fenner in Veron, 2000 (vol. 2, p. 86)
85. *Plesiastrea devantieri* Veron, 2000 (vol. 3, p. 228)
86. *Pocillopora effusa* Veron, 2000 (vol. 2, p. 39; misspelled there as *Pocillopora effusus*)
87. *Pocillopora fungiformis* Veron, 2000 (vol. 2, p. 40)
88. *Pocillopora indiania* Veron, 2000 (vol. 2, p. 37)
89. *Pocillopora kelleheri* Veron, 2000 (vol. 2, p. 32)
90. *Pocillopora zelli* Veron, 2000 (vol. 2, p. 36)
91. *Podabacia lankaensis* Veron, 2000 (vol. 3, p. 315)
92. *Podabacia sinai* Veron, 2000 (vol. 3, p. 314)
93. *Porites desilveri* Veron, 2000 (vol. 3, p. 308)
94. *Porites flavus* Veron, 2000 (vol. 3, p. 341)
95. *Porites harrisoni* Veron, 2000 (vol. 3, p. 343)
96. *Porites napopora* Veron, 2000 (vol. 3, p. 318)
97. *Porites rugosus* Fenner & Veron in Veron, 2000 (vol. 3, p. 342; misspelled there as *Porites rugosa*)
98. *Porites tuberculosus* Veron, 2000 (vol. 3, p. 331; misspelled there as *Porites tuberculosa*)
99. *Poritipora paliformis* Veron, 2000 (vol. 3, p. 347)
100. *Sandalolitha africana* Veron, 2000 (vol. 2, p. 299)
101. *Seriatopora dendritica* Veron, 2000 (vol. 2, p. 46)
102. *Seriatopora guttata* Veron, 2000 (vol. 2, p. 50; misspelled there as *Seriatopora guttatus*)
103. *Stylophora madagascarensis* Veron, 2000 (vol. 2, p. 57)

Generic names

1. *Poritipora* Veron, 2000 (vol. 3, p. 347) (type species *Poritipora paliformis* Veron, 2000 by monotypy) (This name appears to meet all the conditions for availability under the fourth edition of the Code without recourse to Article 86.1.2.)
2. *Micromussa* Veron, 2000 (vol. 3, p. 8) (type species *Acanthastrea amakusensis* Veron, 1990 by original designation)

Family names

EUPHYLLIDAE Veron, 2000, vol. 2, p. 67 (type genus *Euphyllia* Dana, 1846 by original designation). This name, presented by Veron as a new family, is evidently merely an erroneous subsequent spelling of EUPHYLLIIDAE Milne Edwards, 1857, proposed originally as EUPHYLLIACEAE at the lower family-level rank of 'agèle'. Under the Principle of Coordination (Article 36.1), EUPHYLLIIDAE Milne Edwards, 1857 is thus the correct attribution and spelling, and neither EUPHYLLIDAE, nor its emendation EUPHYLLIIDAE sensu Veron (2002), has any separate availability.

References

- Milne Edwards, H. 1857. *Histoire naturelle des Coralliaires ou Polypes proprement dits*, vol. 2. 633 pp. Librairie Encyclopédique de Roret, Paris.
- Veron, J.E.N. 2000. *Corals of the world*, vols. 1–3. 1410 pp. Australian Institute of Marine Science, Townsville, Australia.
- Veron, J.E.N. 2002. New species described in Corals of the World. *Australian Institute of Marine Science Monograph Series*, **11**: 1–206.

Case 3540

AMPHIPORIDAE Rukhin, 1938 (Porifera, Stromatoporata, Amphiporida): proposed emendation to AMPHIPORAIDAE to remove homonymy with AMPHIPORIDAE McIntosh, 1873 (Nemertea, Hoplonemertea)

Hüseyin Özdikmen

Gazi University, Science & Arts Faculty, Department of Biology, 06500 Ankara, Turkey (e-mail: ozdikmen@gazi.edu.tr)

Hakan Demir

Gazi University, Science & Arts Faculty, Department of Biology, 06500 Ankara, Turkey (e-mail: ozyptila@gmail.com)

Abstract. The purpose of this application, under Articles 29 and 55.3 of the Code, is to emend the spelling of the family-group name AMPHIPORIDAE Rukhin, 1938 (Porifera, Stromatoporata, Amphiporida), a junior homonym of AMPHIPORIDAE McIntosh, 1873 (Nemertea, Hoplonemertea) thereby removing the homonymy between the two names. It is proposed that the stem of the generic name *Amphipora* Schulz, 1883, on which the stromatoporoid name is based, be emended to *Amphipora-* to give AMPHIPORAIDAE, while leaving the nemertean family-group name (based on *Amphiporus* Ehrenberg, 1831) unchanged.

Keywords. Nomenclature; taxonomy; Nemertea; Enopla; Hoplonemertea; AMPHIPORIDAE; *Amphiporus*; Porifera; Stromatoporata; Amphiporida; AMPHIPORAIDAE; *Amphipora*; nemerteans; stromatoporoids; Silurian; Devonian; European seas; cosmopolitan.

1. Family-group names based on the stem *Amphipor-* (Greek ‘*amphi*’ meaning around, on both sides and Greek ‘*poros*’ ‘narrow passage, strait’; the latter latinised to ‘*porus*’ with the sense of ‘channel in the body’) are in use in the order Hoplonemertea (Nemertea, Enopla) as AMPHIPORIDAE McIntosh, 1873 and in the order Amphiporida (Porifera, Stromatoporata) as AMPHIPORIDAE Rukhin, 1938. However, the homonymy between these family-group names has never been resolved. The homonymy between the two family-group names results from similarity of the names of their type genera. In accordance with Article 55.3 of the Code this case is referred to the Commission.

2. The family-group name AMPHIPORIDAE was initially introduced by McIntosh (1873, p. 134) for Nemertea, with the type genus *Amphiporus* Ehrenberg, 1831 (p. 63). According to Gibbon & Crandall (1991), the genus *Amphiporus* Ehrenberg, 1831 was originally established with one included species, *A. albicans* Ehrenberg, 1831. They argued that *A. albicans* Ehrenberg, 1831 should be regarded as a nomen nudum. Therefore, they referred the case to the Commission and proposed to designate the species *Planaria lactiflorea* Johnston, 1828 as type species of the genus *Amphiporus*. The generic name *Amphiporus* Ehrenberg, 1831 with the type species *Planaria*

lactiflorea Johnston, 1828 is listed in the Official List of Generic Names in Zoology (Opinion 1675, BZN 49: 157, June 1992). At present this genus includes many species (Gibson, 2001) from the European seas. The family name AMPHIPORIDAE is in widespread use as a valid name in the order Hoplonemertea and includes at least twenty-six genera.

3. Rukhin (1938, p. 42) proposed a family name (with the type genus *Amphipora* Schulz, 1883 (p. 245)) for Silurian-Devonian stromatoporoids (Porifera). The genus *Amphipora* Schulz, 1883, the type species of which is *Caunopora ramosa* Phillips, 1841 (p. 19), is used as a valid generic name. It contains about 20 species (Stearn et al., 1999). The family name AMPHIPORIDAE is also currently used as a valid name in the order Amphiporida (Porifera, Stromatoporata). According to Stearn et al. (1999), the family AMPHIPORIDAE Rukhin, 1938 contains five genera.

4. Of the two homonymous family-group names discussed above, the senior name AMPHIPORIDAE McIntosh, 1873 in the order Hoplonemertea has been in widespread use (e.g. Clarke & Johnston, 2003; Gibson, 2001, 2009) and it seems advisable to continue using this name as valid.

5. AMPHIPORIDAE Rukhin, 1938 in the order Amphiporida (Porifera, Stromatoporata) is also in use, with no known synonyms (Stearn et al., 1999). Considering that the nemertean name *Amphiporus* is in widespread use and on the Official List it is proposed that the stem of the poriferan type genus be emended to remove the homonymy. The family-group names are based on the identical stem *Amphipor*- and it is proposed that this homonymy be removed by using the entire generic name *Amphipora* as the stem for the formation of the stromatoporoid family name, leaving the nemertean name unaltered.

6. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that for the purposes of Article 29 of the Code the stem of the generic name *Amphipora* Schulz, 1883 is *Amphipora*-;
- (2) to place on the Official List of Generic Names in Zoology the name *Amphipora* Schulz, 1883 (gender: feminine), type species by original designation *Caunopora ramosa* Phillips, 1841;
- (3) to place on the Official List of Specific Names in Zoology the name *ramosa* Phillips, 1841, as published in the binomen *Caunopora ramosa* (specific name of the type species of *Amphipora* Schulz, 1883);
- (4) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) AMPHIPORIDAE McIntosh, 1873, type genus *Amphiporus* Ehrenberg, 1831 (Nemertea);
 - (b) AMPHIPORAIDAE Rukhin, 1938, type genus *Amphipora* Schulz, 1883 (spelling emended by the ruling in (1) above) (Porifera);
- (5) to place on the Official List of Rejected and Invalid Family-Group Names in Zoology the name AMPHIPORIDAE Rukhin, 1938 (type genus *Amphipora* Schulz, 1883) (Porifera).

References

- Clarke, A. & Johnston, N.M. 2003. Antarctic marine benthic diversity. *Oceanography and Marine Biology: An Annual Review*, 41: 47–114.

- Ehrenberg, C.G.** 1828–1831. Phytozoa turbellaria Africana et Asiatica in Phytozoorum Tabula IV et V delineata. Pp. 53–67 in Hemprich, P.C. & Ehrenberg, C.G. (Eds.), *Symbolae Physicae, seu icones et descriptiones Corporum Naturalium novorum . . . Pars Zoologica. Animalia evertebrata exclusis insectis*. 126 pp. Plates published in 1828, text in 1831.
- Gibson, R.** 2001. Nemertini (Nemertae), in Costello, M.J. (Ed.), European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification. *Collection Patrimoines Naturels*, **50**: 152–156.
- Gibson, R.** 2009. Amphiporidae. In Gibson, R. (Ed.), *World Nemertina database*. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=122323> (Accessed 21 July, 2011).
- Gibson, R. & Crandall, F.B.** 1991. *Amphiporus* Ehrenberg, 1831 (Nemertea): proposed designation of *Planaria lactiflorea* Johnston, 1828 as the type species. *Bulletin of Zoological Nomenclature*, **48**(1): 22–23.
- McIntosh, W.C.** 1873–1874. *A monograph of the British annelids. Part 1 (1873). The nemerteans*. Pp. i–xiii, 1–96, Part 1 continued (1874). Pp. 97–213d, The Ray Society, London.
- Phillips, J.** 1841. *Figures and descriptions of the Paleozoic fossils of Cornwall, Devon, and West Somerset observed in the course of the Ordinance Geological Survey of that district*. Pp. 1–231. Longman, Brown, Green & Longmans, London.
- Rukhin, L.B.** 1938. Nizhnepaleozoiskie korally i Stromatoporoidei verkhnei chasti basseina R. Kolymy [The Lower Paleozoic corals and Stromatoporoides of the upper part of the Kolyma River]. *Gostrest Dal'stroya. Materiyaly po izucheniyyu Kolymsko-Indigirskogo kraya. Ser. 2. Geologiya in geomorphologiya*, vyp. 10 [Contributions to the knowledge of the Kolyma-Indigirka Land. Series 2, Geology and Geomorphology], vol. 10. 119 pp. Moscow & Leningrad.
- Schulz, E.** 1883. Die Eifelkalkmulde von Hillesheim, Nebst einem palaeontologischen Anhang. *Jahrbuch der Königlich Preussischen Geologischen Landesanstalt (und Bergakademie) zu Berlin für 1882*: 158–250.
- Stearn, C.W., Webby, B.D., Nestor, H. & Stock, C.W.** 1999. Revised classification and terminology of Palaeozoic stromatoporoids. *Acta Palaeontologica Polonica*, **44**(1): 1–70.
- Webby, B.D., Stearn, C.W. & Zhen, Y.Y.** 1993. Lower Devonian (Pragian-Emsian) stromatoporoids from Victoria. *Royal Society of Victoria, Proceedings*, **105**: 113–186.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3553***Helix atlantica* Morelet & Drouët, 1857 (currently *Oxychilus (Drouetia) atlanticus*; Gastropoda, Pulmonata): proposed conservation of current usage by designation of a neotype**

António M. de Frias Martins

CIBIO-Açores – Centre for Research on Biodiversity and Genetic Resources, Department of Biology, University of the Azores, 9501–801 Ponta Delgada, Açores, Portugal (e-mail: frias@uac.pt)

Luís Silva

CIBIO-Açores – Centre for Research on Biodiversity and Genetic Resources, Department of Biology, University of the Azores, 9501–801 Ponta Delgada, Açores, Portugal (e-mail: lsilva@uac.pt)

Kurt Jordaens

Royal Museum for Central Africa, Leuvensesteenweg 13, B-3080 Tervuren, Belgium & Department of Biology, Evolutionary Ecology Group, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium (e-mail: kurt.jordaens@ua.ac.be)

Thierry Backeljau

Royal Belgian Institute of Natural Sciences, Vautierstraat 29, B-1000 Brussels, Belgium & Department of Biology, Evolutionary Ecology Group, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium (e-mail: thierry.backeljau@naturalsciences.be)

Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the current usage of the name *Helix atlantica* Morelet & Drouët, 1857 (currently *Oxychilus (Drouetia) atlanticus*) for a species of pulmonate gastropod by designating a neotype. The syntypes of this species housed in the Natural History Museum, London are not in taxonomic accord with the prevailing usage. Originally *H. atlantica* was said to occur in most islands of the archipelago of the Azores, but later this name was uniformly used for specimens from São Miguel Island only, while the syntypes are from Santa Maria Island. We request the Commission use its plenary power to set aside the existing name-bearing types and to designate a neotype from São Miguel Island, to conserve the prevailing usage and concept of the species.

Keywords: Nomenclature; taxonomy; *Helix*; *Helix atlantica*; *Oxychilus atlanticus*; pulmonate gastropods; Azores.

1. Morelet & Drouët (1857) briefly described 12 species of land molluscs collected during their expedition to the Azores without providing occurrence data, which were

added later by Morelet (1860). Morelet (1860, p. 168) stated that although *Helix atlantica* Morelet & Drouët, 1857 occurs on most islands of the archipelago, it is particularly abundant in São Miguel. Moreover, Morelet & Drouët (1857, p. 149) mentioned in the description a size of 8 mm, but Morelet (1860, p. 169) observed that the specimens of *H. atlantica* from Santa Maria (12 mm) and Faial (6 mm) differed somewhat from those of São Miguel.

2. More than a century later, Riedel (1964) used anatomical evidence from specimens collected by the Lund Expedition to the Azores in 1957 to corroborate and formalise Morelet's (1860) claims, by regarding the populations of *H. atlantica* from Faial and some from Santa Maria as subspecies of the typical form of the species from São Miguel. Riedel (1964, p. 31) raised Morelet's (1860, p. 168) variety β *minor* from Faial to subspecific status maintaining Morelet's (1860) authorship. However, from specimens of a smaller size (7 mm) than that given by Morelet & Drouët (1857) for the type of *Helix atlantica*, Riedel (1964, p. 34) described a new subspecies for Santa Maria, viz. *Oxychilus atlanticus brincki*, suggesting the possibility that the 12 mm specimens mentioned by Morelet (1860, p. 169) could belong to a new form. The holotype of *O. a. brincki* is deposited at the Institute of Zoology of the Lund University, Sweden (Riedel, 1964, p. 7). Finally, Riedel (1980) emphasised the separation of these subspecific taxa by raising them to specific level, a decision that since then has been consistently applied (e.g. Martins, 1989, 1991, 1999, 2005; Martins et al., 1991, 2006; Brito, 1992; Cunha et al., 1993, 2001, 2005, 2010; Rodrigues et al., 1998, 2002, 2003; Rodrigues & Gómez, 1999; Gómez & Rodrigues, 2000; Bank et al., 2002; Rodrigues & Martins, 2003; Cameron et al., 2007).

3. This taxonomic practice, however, entails a nomenclatural problem, as the three specimens labelled syntypes of '*Helix atlantica*' from Morelet's collection deposited at the Natural History Museum, London (BMNH 93.2.4.996-8) are from Santa Maria. Inspection of this material revealed that one of these specimens corresponds to *Oxychilus (Drouetia) brincki* Riedel, 1964, while the other two belong to an undescribed species. Riedel (1964) did not consider these syntypes. Because the specimens he had at hand were much smaller (7 mm) than the variety mentioned by Morelet (1860) (12 mm), he assumed that the latter could belong to another form, and proceeded to select a holotype for *Oxychilus (Drouetia) atlanticus brincki* from the material collected by the Lund Expedition in 1957 (Riedel, 1964, pp. 27–34). Obviously, by this action and by explicitly restricting the type locality of *Helix atlantica* to São Miguel ['Terra typica: Azoren (Insel São Miguel, restr.)'], while regarding the Santa Maria populations as a different species, Riedel (1964, 1980) introduced a nomenclatural problem, as all existing syntypes of '*Helix atlantica* Morelet & Drouët, 1857' came from Santa Maria. De Winter (1989) recognised the variability of the taxon in São Miguel by describing *Oxychilus (Drouetia) batalhanus* and subsequent research (Martins, 1991, 2005; Martins et al., 2010) has shown that *Drouetia* in São Miguel is a complex of several anatomically closely related taxonomic units. Use of the Principle of Priority to relegate de Winter's name to synonymy is not justifiable, for there are other taxonomic units involved in *O. (D.) atlanticus*. The designation of a neotype for *Helix atlantica* linking the name to one of these taxonomic units is, therefore, needed to fix the true identity of the taxon. The proper identification of these endemic taxonomic units throughout the island,



Fig. 1. Neotype of *Helix atlantica* Morelet & Drouët, 1857. Collected at Lagoa Verde, Sete Cidades, São Miguel, Açores, Portugal; 11-11-2010; AM de Frias Martins coll. Deposited at the Natural History Museum, London (NHMUK 20100653). Scale bar = 1 mm.

sometimes confined to small areas, will impact on the development of conservation policies, thus reinforcing the need to designate appropriate type material.

4. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Helix atlantica* Morelet & Drouët, 1857 and to designate specimen NHMUK 20100653, deposited at the Natural History Museum, London as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *atlantica* Morelet & Drouët, 1857, as published in the binomen *Helix atlantica* and as defined by the neotype designated in (1) above.

References

- Bank, R.A., Groh, K. & Ripken, T.E.J. 2002. Catalogue and bibliography of the non-marine Mollusca of Macaronesia. Pp. 89–235 in Falkner, G., Groh, K. & Speight, M.C.D. (Eds.), *Collectanea Malacologica*. ConchBooks/Friedrich-Held-Gesellschaft, Hackenheim.
- Brito, C.P. 1992. Electrophoretic results of a biochemical systematic survey of *Oxychilus* (*Drouetia*) *atlanticus* and some other Zonitidae (Gastropoda: Zonitidae) in S. Miguel, Azores. *Biological Journal of the Linnean Society*, **46**: 145–151.
- Cameron, R.A.D., Cunha, R.M.T da & Martins, A.M.F. 2007. Chance and necessity: land snail faunas of São Miguel, Açores, compared with those of Madeira. *Journal of Molluscan Studies*, **73**: 11–21.
- Cunha, R., Rodrigues, P. & Martins, A.M.F. 2010. List of Molluscs. Pp. 165–177 in Borges, P.A.V., Costa, A., Cunha, R.M.T., Gabriel, R., Gonçalves V., Martins, A.M.F., Melo, I.,

- Parente, M., Raposeiro, P., Rodrigues, P., Santos R.S., Silva, L., Vieira, P. & Vieira, V. (Eds.), *A list of the terrestrial and marine biota from the Azores*. Principia, Cascais.
- Cunha, R.M.T. da, Rodrigues, A.S. & Sousa, H. 2001. The influence of temperature and photoperiod on the maturation of the seminal vesicle and albumen gland in *Oxychilus (Drouetia) atlanticus* (Morelet & Drouët) (Pulmonata, Zonitidae). *Arquipélago. Life and Marine Sciences*, Supplement 2, Part B: 67–70.
- Cunha, R.M.T., Martins, A.M.F., Lourenço, P. & Rodrigues, A.S. 2005. Lista dos Moluscos. Pp. 157–161 in Borges, P.A.V., Cunha, R.M.T., Gabriel, R., Martins, A.M.F., Silva, L. & Vieira, V. (Eds.), *A list of the terrestrial fauna (Mollusca and Arthropoda) and flora (Bryophyta, Pteridophyta and Spermatophyta) from the Azores*. Direcção Regional do Ambiente and Universidade dos Açores, Horta, Angra do Heroísmo and Ponta Delgada.
- Cunha, R.M.T., Rodrigues, A.S., Brito, C.P., Winnepeninckx, B. & Martins, A.M.F. 1993. Moluscos terrestres da Ilha do Faial. Lista preliminar. *Relatórios e Comunicações do Departamento de Biologia. Expedição Científica Faial/93*: 22: 53–59.
- de Winter, A.J. 1989. Remarks on the non-marine molluscan fauna of the Azores. 3. A new species of *Drouetia* from the Isle of São Miguel (Pulmonata: Zonitidae). *Basteria*, 53: 63–67.
- Gómez, B.J. & Rodrigues, A.S. 2000. Calcium phosphate granules in the reproductive system of *Oxychilus atlanticus* (Gastropoda: Pulmonata). *Journal of Molluscan Studies*, 66: 197–204.
- Martins, A.M.F. 1989. Espécies novas do género *Oxychilus* (Gastropoda: Zonitidae) na Ilha Terceira. *Açoreana*, 7: 55–71.
- Martins, A.M.F. 1991. Comparative anatomy of populations of *Oxychilus (Drouetia) atlanticus* (Morelet et Drouët, 1857) (Pulmonata: Zonitidae) from São Miguel island, Azores. *Proceedings of the Tenth International Malacological Congress (Tübingen, 1989)*: 571–575.
- Martins, A.M.F. 1999. Evolution and distribution of the terrestrial molluscs of the Açores. *Bulletin of the Malacological Society of London*, 33: 5–6.
- Martins, A.M.F. 2005. The shaping of a species: the Azorian *Drouetia* Gude (Pulmonata: Zonitidae: *Oxychilus*) as a model. *Records of the Western Australian Museum*, Supplement no. 68: 143–157.
- Martins, A.M.F., Backeljau, T., Cunha, R.M.T. & Brito, C.P. 1991. Moluscos terrestres da Ilha de Santa Maria. Lista preliminar. *Relatórios e Comunicações do Departamento de Biologia. Santa Maria e Formigas/1990*, 19: 53–59.
- Martins, A.M.F., Cunha, R.M.T., Sousa, M.H. & Melo, P.J. 2006. Distribuição dos moluscos terrestres da ilha do Pico (Açores) e variabilidade de *Oxychilus (Drouetia) minor* (Morelet, 1860). *Relatórios e Comunicações do Departamento de Biologia*, 34: 53–67.
- Martins, A.M.F., Jordaens, K. & Backeljau, T. 2010. Conchological and anatomical differentiation in *Drouetia* land snails from São Miguel (Azores). *Tropical Natural History*, Supplement no. 3: 313.
- Morelet, A. & Drouët, H. 1857. Conchologiae Azoricae prodromus novarum specierum diagnoses sistens. *Journal de Conchyliologie*, (2) 6: 148–153.
- Morelet, A. 1860. *Notice sur l'histoire naturelle des Açores suivie d'une description des mollusques terrestres de cet archipel*. 214 pp. J.-B. Baillière, Paris.
- Riedel, A. 1964. Zonitidae (Gastropoda) der Azoren. *Boletim do Museu Municipal do Funchal*, 18: 5–60.
- Riedel, A. 1980. *Genera Zonitidarum*. 197 pp. Backhuys Publishers, Rotterdam.
- Rodrigues, A.S. & Gómez, B.J. 1999. Copulatory process in *Oxychilus (Drouetia) atlanticus* (Morelet & Drouët, 1857) (Pulmonata: Zonitidae). *International Journal of Invertebrate Reproduction and Development*, 36: 137–139.
- Rodrigues, A.S. & Martins, R.J. 2003. Annual maturation of the perivaginal gland of *Oxychilus (Drouetia) atlanticus* (Pulmonata: Zonitidae): morphological and cytological approaches. *Journal of Molluscan Studies*, 69: 396–398.
- Rodrigues, A.S., Cunha, R.M.T. & Gómez, B.J. 2003. The egg of *Oxychilus (Drouetia) atlanticus* (Pulmonata: Zonitidae): surface structure and carbohydrate composition. *Malacologia*, 45: 121–124.

- Rodrigues, A.S., Gómez, B., Cunha, R.M.T. da & Martins, A.M.F. 1998. Maturation diagnostic Characters in *Oxychilus (Drouetia) atlanticus* (Morelet & Drouët) (Pulmonata, Zonitidae). *Iberus*, **16**: 75–84.
- Rodrigues, A.S., Gómez, B.J. & Martins, R. 2002. The perivaginal gland in *Oxychilus (Drouetia) atlanticus* (Morelet & Drouët, 1857) (Pulmonata: Zonitidae): a histological and histochemical approach. *Journal of Invertebrate Reproduction and Development*, **41**: 95–99.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3555**CHILODONTIDAE Macalister, 1876 (Ciliophora), CHILODONTINAE Eigenmann, 1910 (Pisces, Characiformes), and CHILODONTINAE Wenz, 1938 (Mollusca, Gastropoda): proposed resolution of homonymy between family-group names**

D.G. Herbert

Natal Museum, P. Bag 9070, Pietermaritzburg 3200, South Africa
(e-mail: dherbert@nmsa.org.za)

P. Bouchet

Muséum National d'Histoire Naturelle, 55 rue Buffon, 75007 Paris, France
(e-mail: pbouchet@mnhn.fr)

Abstract. The purpose of this application, under Articles 29 and 55 of the Code, is to remove the homonymy between the family-group names CHILODONTIDAE Macalister, 1876 (type genus *Chilodon* Ehrenberg, 1834 [Ciliophora]), CHILODONTINAE, an emendation of CHILODINAE Eigenmann, 1910 (type genus *Chilodus* Müller & Troschel, 1844 [Pisces]), and CHILODONTINAE Wenz, 1938 (type genus *Chilodonta* Étallon, 1859 [Gastropoda]). It is proposed to place the unused name CHILODONTIDAE Macalister, 1876 on the Official Index; to place the name CHILODONTINAE Eigenmann, 1910, as emended by Fowler (1950), on the Official List; and that the stem of the generic name *Chilodonta* Étallon, 1859 be deemed to be *Chilodonta*-, such that the name CHILODONTINAE Wenz, 1938 is emended to CHILODONTAINAE Wenz, 1938.

Keywords. Nomenclature; taxonomy; Ciliophora; Pisces; Characiformes; Vetigastropoda; SEGUENZIOIDEA; CHILODIDAE; CHILODONTIDAE; CHILODONELLIDAE; homonymy; ciliates; fish; gastropods.

1. The family-group name CHILODONTIDAE was established by Macalister (1876, p. 71), based upon the type genus *Chilodon* Ehrenberg, 1834, for a group of ciliate protozoans. Strand (1928, p. 31), because of a perceived homonymy between *Chilodon* Ehrenberg, 1831 [Mollusca] and *Chilodon* Ehrenberg, 1834, established *Chilodonella* Strand, 1928 as a substitute name for the latter, and Deroux (1970, p. 180) established the name CHILODONELLINAE based on *Chilodonella* Strand, 1928. *Chilodon* Ehrenberg, 1831 is in fact a nomen nudum [no description, no included nominal species, and no indication], and *Chilodon* Ehrenberg, 1834 and CHILODONTIDAE Macalister, 1876, remain potentially valid names.

2. The family-group name CHILODINAE was established by Eigenmann (1910, p. 424), based on the type genus *Chilodus* Müller & Troschel, 1844, for a group of characiform fish. The name *Chilodus* Müller & Troschel, 1844, with the type species *Chilodus punctatus* Müller & Troschel, 1844 by monotypy, has been placed on the Official List of Generic Names in Zoology by Opinion 1150 (BZN 37(2): 72–74, June

1980). The spelling of CHILODINAE was later emended by Fowler (1950), on the grounds of classical grammar, to CHILODONTINAE.

3. The gastropod family-group name CHILODONTINAE was established by Wenz (1938, p. 296), based on the type genus *Chilodonta* Étallon, 1859 (type species *Chilodonta clathrata* Étallon, 1859, by subsequent designation of Bayan, 1874, p. 335).

4. Both CHILODONTINAE (attributed to Eigenmann, 1910) and CHILODONTINAE Wenz, 1938 are in current use, usually at family level. Usage of the names *Chilodon* Ehrenberg, 1834 and CHILODONTIDAE Macalister, 1876 has been discontinued, and the substitutes *Chilodonella* Strand, 1928 and CHILODONELLINAE Deroux, 1970 (raised to family rank by Corliss, 1977, p. 119) are in current use (e.g. Corliss, 1979; Foissner, 1979, 1988; Lynn, 2010). However, as *Chilodon* Ehrenberg, 1834 and CHILODONTIDAE Macalister, 1876 remained in use well into the 20th century (e.g. Kudo, 1931, p. 354, where the family name was attributed in error to Bütschli), they cannot be declared nomina oblita under Article 23.9.2 of the Code.

5. Although there is nothing in Müller & Troschel's description of *Chilodus* that suggests that the name was based on the Greek *odous* (a tooth), Fowler (1950) emended the fish name CHILODINAE to CHILODONTINAE because the genitive singular of *odous* is *odontos*, and thus the stem for the family name would be *Chilodont-*. This interpretation was seconded by Steyskal (1980), who insisted that fish names ending in *-odus* have a stem in *-odont-*. The latinisation of the Greek *odous* to *odus* is a simple transliteration of the Greek diphthong *-ou-* to *-u-* (cf. Grensted & Chester Bradley, 1985) and does not constitute a 'change of ending' in terms of Article 29.3.2 of the Code. If one accepts this etymology of *Chilodus*, then the genitive stem of *Chilodus* is indeed *Chilodont-* (Article 29.3.1 of the Code) as claimed by Fowler (1950) and his emendation is justified. Although Géry (1977) persisted in using CHILODINAE, making it explicit that it was intentional, after Steyskal (1980), the spelling CHILODONTINAE has become the accepted one, usually at family level (see, e.g. Vari, 1983; Isbrücker & Nilssen, 1988; Vari et al. 1995; Eschmeyer, 1998; Martins et al., 2000; Reis et al., 2003; Calcagnotto et al., 2005; Nelson, 2006; Berra, 2007; Mirande, 2010). It is also consistent with the formation of other fish family-group names e.g. DISTICHODONTIDAE (based on *Distichodus* Müller & Troschel 1844), HEMIODONTIDAE (based on *Hemiodus* Müller, 1842) and PROCHILODONTIDAE (based on *Prochilodus* Agassiz, 1829).

6. The gastropod name CHILODONTINAE was not initially widely used. However, since the publication of Hickman & McLean (1990), it has received increasing usage in the literature pertaining to Recent and fossil vetigastropods, initially as a tribe within the trochoidean EUCYCLINAE (Hickman & McLean, 1990, Hickman, 1996, 1998; Kiel & Bandel, 2001), and more recently as a family (Bouchet & Rocroi, 2005; Poppe et al., 2006; Kano, 2008; Williams et al. 2008; Kano et al. 2009; Bandel, 2010) within the SEGUENZIOIDEA. CHILODONTINAE Wenz, 1938 has no synonym (see Bouchet & Rocroi, 2005).

7. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to rule that the name *Chilodon* Ehrenberg, 1834 is suppressed for the Purposes of the Principle of Priority but not for those of the Principle of Homonymy;

- (b) to rule that the name CHILODONTIDAE Macalister, 1876 is suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (c) to rule that CHILODONTINAE as emended by Fowler (1950) is a justified emendation of the original spelling CHILODINAE Eigenmann, 1910;
- (d) to rule that for the purposes of Article 29 of the Code, the stem of the generic name *Chilodonta* Étallon, 1859 is *Chilodonta-*;
- (2) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) CHILODONELLINAE Deroux, 1970 (type genus *Chilodonella* Strand, 1928) (Ciliophora);
 - (b) CHILODONTINAE Eigenmann, 1910 (type genus *Chilodus* Müller & Troschel, 1844) (Pisces);
 - (c) CHILODONTAINAE Wenz, 1938 (type genus *Chilodonta* Étallon, 1859) (spelling emended by the ruling in (1)(d) above) (Mollusca);
- (3) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the following names:
 - (a) CHILODONTIDAE Macalister, 1876, as suppressed by the ruling in (1)(b) above (Ciliophora);
 - (b) CHILODONTINAE Wenz, 1938 (junior homonym of CHILODONTINAE Eigenmann, 1910 spelling emended to CHILODONTAINAE by the ruling in (1)(d) above) (Mollusca).

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References

- Bandel, K.** 2010. Relationships of the Triassic Eucycloidea Koken, 1897 (Mollusca, Gastropoda) to modern genera such as *Pagodatrochus*, *Calliotropis* and *Euchelus*, based on morphology of the early shell. *Bulletin of Geosciences*, **85**(3): 435–486.
- Bayan, M.** 1874. Sur la succession des assises et des faunes dans les terrains jurassiques supérieurs. *Bulletin de la Société Géologique de France*, (3)**2**: 316–343.
- Berra, T.M.** 2007. *Freshwater fish distribution*. 615 pp. University of Chicago Press, Chicago.
- Bouchet, P. & Rocroi, J-P.** 2005. Classification and nomenclator of gastropod families. *Malacologia*, **47**(1–2): 1–397.
- Calcagnotto, D., Schaefer, S.A. & DeSalle, R.** 2005. Relationships among characiform fishes inferred from analysis of nuclear and mitochondrial gene sequences. *Molecular Phylogenetics and Evolution*, **36**(1): 135–153.
- Corliss, J.O.** 1977. Annotated assignment of families and genera to the orders and classes currently comprising the Corlissian scheme of higher classification for the phylum Ciliophora. *Transactions of the American Microscopical Society*, **96**: 104–140.
- Corliss, J.O.** 1979. *The ciliated Protozoa. Characterization, classification and guide to the literature*, Ed. 2. 455 pp. Pergamon Press, New York.
- Deroux, G.** 1970. La série “Chlamydonellienne” chez les Chlamydonodontidae (Holotriches, Cytrophorina Fauré-Frémiet). *Protistologica*, **6**: 155–182.

- Ehrenberg, C.G.** 1831. *Symbolae physicae, seu icones et descriptiones corporum naturalium novorum aut minus cognitorum, quae ex itineribus per Libyam, Aegyptum, Nubiam, Dongalam, Syriam, Arabiam, Habessiniam . . . Invertebrata*. Decas prima: Mollusca, folio d. Berolini. 10 plates with explanations.
- Ehrenberg, C.G.** 1834. Dritter Beitrag zur Erkenntniß großer Organisation in der richtung des kleinsten Raumes. *Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin*, (1833): 145–336.
- Eigenmann, C.H.** 1910. Catalogue of the fresh-water fishes of tropical and South temperate America. *Reports of Princeton University Expedition to Patagonia 1896–1899*, (Zoology), 3: 375–512.
- Eschmeyer, W.N.** 1998. *Catalog of fishes*. 3 vols. 2905 pp. Special Publication, California Academy of Sciences, San Francisco.
- Foissner, W.** 1979. Taxonomische Studien über die Ciliaten des Großglocknergebietes (Hohe Tauern, Österreich). Familien Microthoracidae, Chilodonellidae und Furgasoniidae. *Sitzungsberichte der Österreichischen Akademie der Wissenschaften, Mathematisch-naturwissenschaftliche Klasse*, 188: 27–43.
- Foissner, W.** 1988. Taxonomie und Ökologie einiger Ciliaten (Protozoa, Ciliophora) des Saprobiensystems. II. Familie Chilodonellidae. *Hydrobiologia*, 162: 21–45.
- Fowler, H.W.** 1950. Os peixes de agua doce do Brasil (2a entrega). *Arquivos de Zoologia do Estado de Sao Paulo*, 6: 205–401.
- Géry, J.** 1977. *Characoids of the world*. 672 pp. TFH Publications, Neptune City.
- Grensted, L.W. & Chester Bradley, J.** 1985. Transliteration and latinization of Greek words. Appendix B in *International Code of Zoological Nomenclature*. Third edition. International Trust for Zoological Nomenclature, London.
- Hickman, C.S.** 1996. Phylogeny and patterns of evolutionary radiation in trochoidean gastropods. Pp. 177–198 in Taylor J.D. (Ed.), *Origin and Evolutionary Radiation of the Mollusca*. Oxford University Press, Oxford.
- Hickman, C.S.** 1998. Superfamily Trochoidea. Pp. 671–690 in Beesley, P.L., Ross, G.J.B. & Wells, A. (Eds.), *Mollusca: the southern synthesis. Fauna of Australia*, vol. 5, Part B. viii, 565–1234 pp. CSIRO Publishing, Melbourne.
- Hickman, C.S. & McLean, J.H.** 1990. Systematic revision and suprageneric classification of trochacean gastropods. *Science series, Natural History Museum of Los Angeles County*: 35: 1–169.
- Isbrücker, I.J.H. & Nijssen, H.** 1988. Review of the South American characiform fish genus *Chilodus*, with description of a new species, *C. gracilis* (Pisces, Characiformes, chilodontidae). *Beaufortia*, 38(3): 47–56.
- Kano, Y.** 2008. Vetigastropod phylogeny and a new concept of Seguenzioidea: independent evolution of copulatory organs in the deep-sea habitats. *Zoologica Scripta*, 37: 1–21.
- Kano, Y., Chikyu, E. & Warén, A.** 2009. Morphological, ecological and molecular characterization of the enigmatic planispiral snail genus *Adeuomphalus* (Vetigastropoda: Seguenzioidea). *Journal of Molluscan Studies*, 75: 397–418.
- Kiel, S. & Bandel, K.** 2001. Trochidae (Archaeogastropoda) from the Campanian of Torallola in northern Spain. *Acta Geologica Polonica*, 51(2): 137–154.
- Kudo, R.R.** 1931. *Handbook of protozoology*. 451 pp. Thomas, Springfield.
- Lynn, D.H.** 2008 [corrected printing 2010]. *The ciliated Protozoa*. Ed. 3. xxxiv, 606 pp. Springer, Dordrecht, Heidelberg, London, New York.
- Macalister, A.** 1876. *An introduction to animal morphology and systematic zoology. Part 1. Invertebrata*. 461 pp. Longmans, Green & Co., London.
- Martins, C., Venere, P.C., Mestriner, C.A., Cestari, M.M., Ferreira, R. & Galetti, P.M.** 2000. Chromosome relationships between Anostomidae and Chilodontidae fish (Characiformes). *Cytologia*, 65: 153–160.
- Mirande, J.M.** 2010. Phylogeny of the family Characidae (Teleostei: Characiformes): from characters to taxonomy. *Neotropical Ichthyology*, 8(3): 385–568.
- Nelson, J.S.** 2006. *Fishes of the world*. Ed. 4. 624 pp. Wiley & Sons, New Jersey.
- Poppe, G.T., Tagaro, S.P. & Dekker, H.** 2006. The Seguenziidae, Chilodontidae, Trochidae, Calliostomatidae and Solariellidae of the Philippine Islands. *Visaya*, Supplement 2: 1–228.

- Reis, R.E., Kullander S.O. & Ferraris C.J.** 2003. *Check list of the freshwater fishes of South and Central America*. 742 pp. Pontificia Universidade Católica do Rio Grande do Sul, Porto Alegre.
- Steyskal, G.C.** 1980. The grammar of family-group names as exemplified by those of fishes. *Proceedings of the Biological Society of Washington*, **93**(1): 168–177.
- Strand, E.** 1928. Miscellanea nomenclatorica zoologica et palaeontologica I-II. *Archiv für Naturgeschichte*, **92**(A8): 30–75.
- Vari, R.P.** 1983. Phylogenetic relationships of the families Curimatidae, Prochilodontidae, Anostomidae, and Chilodontidae (Pisces: Characiformes). *Smithsonian Contributions to Zoology*, **378**: 1–60.
- Vari, R.P., Castro, R.M.C. & Raredon, S.J.** 1995. The Neotropical fish family Chilodontidae (Teleostei: Characiformes): A phylogenetic study and a revision of *Caenotropus* Günther. *Smithsonian Contributions to Zoology*, **577**: i–vi, 1–32.
- Wenz, W.** 1938. Gastropoda. Allgemeiner Teil und Prosobranchia. Prosobranchia 2, vol. 6(1): 241–480 in Wenz, W., *Handbuch der Paläozoologie*. Gebrüder Borntraeger, Berlin.
- Williams, S.T., Karube, S. & Ozawa, T.** 2008. Molecular systematics of Vetigastropoda: Trochidae, Turbinidae and Trochoidea redefined. *Zoologica Scripta*, **37**: 483–506.

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Case 3558***Pleurotoma scabriuscula* Brugnone, 1862 (currently *Mangelia scabriuscula*; Mollusca, Gastropoda, CONOIDEA): proposed conservation**

Daniele Scarponi

Dipartimento di Scienze della Terra e Geologico-Ambientali – Via Zamboni, 67 40126 Bologna – Italy (e-mail: daniele.scarponi@unibo.it)

Alessandro Ceregato

ISMAR CNR – Via Gobetti, 101 40129 Bologna, Italy (e-mail: alessandro.ceregato@bo.ismar.cnr.it)

Giano Della Bella

Via dei Cedri, 91 40050 Monterenzio Bologna, Italy

John K. Tucker

Illinois Natural History Survey, National Great Rivers Research and Education Center, 1 Confluence Way, East Alton, Illinois 62024, U.S.A.

Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Pleurotoma scabriuscula* Brugnone, 1862 (currently *Mangelia scabriuscula*, CONIDAE) originally published as *Pleurotoma scabriusculum*, a junior primary homonym of *Pleurotoma scabriuscula* Edwards, 1861 (currently *Crassispira scabriuscula*, TURRIDAE). Both names are in use, even though the latter is infrequently reported in the literature, and they have not been considered congeneric since 1899 and are unlikely ever to be treated as congeneric again. We propose that the name *Pleurotoma scabriuscula* Brugnone, 1862 (which does not have junior synonyms) be conserved by ruling that it is not invalid by reason of being a junior primary homonym.

Keywords. Nomenclature; taxonomy; Gastropoda; CONOIDEA; CONIDAE; TURRIDAE; *Mangelia*; *Raphitoma*; *Turris*; *Crassispira*; *Pleurotoma*; *Pleurotoma scabriuscula*; gastropods; Eocene; Pliocene; Pleistocene; Recent; Great Britain; Italy.

1. The genus *Pleurotoma* (a Latin neologism from Greek *πλευρά* = side, and *τομή* = cut) was established by Lamarck (1799, p. 73) based on *Murex babylonius* Linnaeus, 1758 (p. 753), which is the type species by monotypy. By the mid-19th century *Pleurotoma* became one of the largest prosobranch genera with more than 700 species. However, in many cases the use of *Pleurotoma* for generic affiliation was a result of a tradition (Seguenza, 1873) or the consequence of *Pleurotoma* being very broadly defined. Hence, the need for a stricter definition of Lamarck's genus has been felt from the early-mid-19th century. Indeed, genera such as *Bela* Leach in Gray, 1847, *Crassispira* Swainson, 1840, *Mangelia* Risso, 1826, and *Perrona* Schumacher,

1817 are examples of taxa originating from *Pleurotoma* revisions (see among others Swainson, 1840; Edwards, 1857). Consequently, starting from the mid-19th century, several nominal species, such as *Pleurotoma scabriuscula* Edwards, 1861 and *Pleurotoma scabriusculum* Brugnone, 1862, previously attributed to Lamarck's genus, were re-assigned to other genera.

2. For all of the 20th century *Murex babylonius* Linnaeus, 1758 was generally considered as the type species of *Turris* Röding, 1798 (see among others Powell, 1966; Kilburn, 1983). It was also designated as the type species for *Turris* Batsch, 1789 (p. 691) by Dubois & Bour (2010, p. 171). *Turris* Batsch was established in 1789 so it has precedence over *Pleurotoma* Lamarck, 1799 and *Turris* Röding, 1798.

3. The genus *Mangelia* was described by Risso (1826, p. 221). The description of this genus was very short, and the type material for the type species is untraceable (Arnaud, 1978; Spada & Della Bella, 2010). Therefore the validity of the genus was intensely debated for almost two centuries. As a consequence several new genera were proposed that are now considered to be synonyms of *Mangelia* (Spada & Della Bella, 2010). The type species *Mangelia striolata* Risso, 1826 (p. 221) is a senior subjective synonym of *M. bertrandi* Payraudeau, 1827 (Spada & Della Bella, 2010).

4. The turrid species *Pleurotoma scabriuscula* Edwards, 1861 (p. 254) from the Eocene of Great Britain, is rarely cited in the literature (see Tucker, 2004 for references). St. John Burton (1933) was the first author to transfer the species to the genus *Drillia* Gray, 1838, whereas the most recent reference assigns *Pleurotoma scabriuscula* Edwards to the genus *Crassispira* Swainson, 1840, subgenus *Tripia* Gregorio, 1890 (see Glibert, 1960). Apart from the above cited authors, to our knowledge only Newton (1891) reported *Pleurotoma scabriuscula* Edwards, 1861 (under the genus *Pleurotoma* Lamarck).

5. The name *Pleurotoma scabriuscula* (cited as *Pleurotoma scabriusculum*) was established by Brugnone (1862, p. 39) for a fossil mangeliid from the Plio–Pleistocene of Italy (Scarponi & Della Bella, 2010 and references therein). *Pleurotoma* is Greek in origin and its gender is feminine (see Lamarck, 1801, p. 84), therefore Brugnone's spelling *scabriusculum* must be corrected. Just a few years after its first description, *P. scabriusculum* was transferred to the subgenus *Mangelia* Risso, 1826 by Seguenza (1873, p. 298). Bellardi (1877) was the first to use *Mangelia* at genus rank to contain Brugnone's species (fide Tucker, 2004). Bellardi's combination was followed by almost all subsequent authors, although a few used genera are now considered junior synonyms of *Mangelia* (i.e. *Mangilia*, *Cythara* (partim) etc.; see Spada & Della Bella, 2010 for an overview on synonymy of the genus *Mangelia*) or allied genera such as *Raphitoma* (see Seguenza, 1875). Hence, after 1899 the Brugnone species was unanimously considered to belong to the genus *Mangelia* or one of its synonyms. Indeed, almost 150 years after its description, this well known mangeliid has (to our knowledge) only been attributed to *Pleurotoma* by Moroni & Paonita (1963), but more than twenty times to *Mangelia* or its synonyms (see Tucker, 2004; Scarponi & Della Bella, 2010).

6. Both names, *Pleurotoma scabriuscula* Edwards, 1861 (currently *Crassispira scabriuscula*) and *Pleurotoma scabriuscula* Brugnone, 1862 (currently *Mangelia scabriuscula*) have been in use for over a hundred years. Both have been referred to different genera that are well separated morphologically and phylogenetically and it is unlikely that they will be treated as congeneric in the future. Furthermore,

Brugnone's species has no available synonym to use as a substitute name. Introducing a new replacement name for the widely and well known name *Pleurotoma scabriuscula* Brugnone, 1862 would result in confusion and loss of information. This application for the conservation of prevailing usage is submitted in the interest of stability and in accordance with Article 23.9.5 of the Code (that is, names not considered congeneric after 1899).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the specific name *Pleurotoma scabriuscula* Brugnone, 1862 is not invalid by reason of being a junior primary homonym of *Pleurotoma scabriuscula* Edwards, 1861;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *scabriuscula* Brugnone, 1862, as published in the binomen *Pleurotoma scabriusculum*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *Pleurotoma scabriuscula* Edwards, 1861 as ruled in (1) above;
 - (b) *scabriuscula* Edwards, 1861, as published in the binomen *Pleurotoma scabriuscula*.

References

- Arnaud, P.M. 1978. Révision des taxa malacologiques Méditerranéens introduits par Antoine Risso. *Annales du Muséum d'Histoire Naturelle de Nice*, **5**: 101–150.
- Batsch, A.J.G.C. 1789. *Versuch einer Anleitung, zur Kenntniss und Geschichte der Thiere und Mineralien, für akademische Vorlesungen entworfen, und mit den nöthigsten Abbildungen versehen. Zweyter Theil. Besondere Geschichte der Insekten, Gewürme und Mineralien*. Pp. 529–860. Akademische Buchhandlung, Jena.
- Bellardi, L. 1877. I molluschi dei terreni terziarii del Piemonte e della Liguria. Parte II. *Memorie della Reale Accademia delle Scienze di Torino*, (2)**29**: 1–373.
- Brugnone, G.A. 1862. *Memoria sopra alcuni Pleurotomi fossili dei Dintorni di Palermo*. 41 pp., 1 pls. F. Lao, Palermo.
- Dubois, A. & Bour, R. 2010. The distinction between family-series and class-series nomina in zoological nomenclature, with emphasis on the nomina created by Batsch (1788, 1789) and on higher nomenclature of turtles. *Bonn Biological Bulletin*, **57**: 149–171.
- Edwards, F.E. 1857. *A monograph of the Eocene Mollusca, or descriptions of shells from the older Tertiaries of England*. Part III, No. II. Prosobranchiata (continued), **9**: 181–240, pls. 24–27, Palaeontographical Society, London.
- Edwards, F.E. 1861. *A monograph of the Eocene Mollusca, or descriptions of shells from the older Tertiaries of England*. Part III, No. III. Prosobranchiata (continued), **12**: 241–330, pls. 28–33. Palaeontographical Society, London.
- Glibert, M. 1960. Les Conacea fossiles du Cénozoïque étranger des collections de l'Institut Royal des Sciences Naturelles de Belgique. *Institut Royal des Sciences Naturelles de Belgique, Mémoire*, (2)**64**: 1–132.
- Kilburn, R.N. 1983. Turridae (Mollusca: Gastropoda) of southern Africa and Mozambique. Part 1. Subfamily Turrinae. *Annals of the Natal Museum*, **25**: 549–585.
- Lamarck, J.B. M. de. 1799. Prodrome d'une nouvelle classification des coquilles, comprenant une rédaction appropriée des caractères génériques, et l'établissement d'un grand nombre de genres nouveaux. *Mémoires de la Société d'Histoire Naturelle de Paris*, **1**: 63–91.
- Lamarck, J.B.P.A. de. 1801. *Système des animaux sans vertèbres, ou Tableau général des classes, des ordres et des genres de ces animaux; Présentant leurs caractères essentiels et leur distribution, d'après la considération, et suivant l'arrangement établi dans les galeries du Muséum d'Hist. Naturelle, parmi leurs dépouilles conservées; Précédé du discours*

- d'ouverture du Cours de Zoologie, donné dans le Muséum National d'Histoire Naturelle l'an 8 de la République.* viii, 432 pp. Lamarck and Deterville, Paris.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Moroni, M.A. & Paonita, G.** 1963. Nuovi dati sul Pliocene e il Quaternario dei dintorni di Palermo. 3) Una malacofauna delle sabbie gialle plioceniche di Altavilla. *Rivista Mineraria Siciliana*, **14**: 27–65.
- Newton, R.B.** 1891. *Systematic list of Frederick E. Edwards Collection of British Oligocene and Eocene Mollusca in the British Museum (Natural History), with references to the type-specimens from similar horizons contained in other collections belonging to the Geological Department of the Museum.* xxviii, 365 pp. British Museum (Natural History), London.
- Powell, A.W.B.** 1967. The family Turridae in the Indo-Pacific. Part 1a. The subfamily Turrinae concluded. *Indo-Pacific Mollusca*, **1**: 409–444.
- Risso, A.** 1826. *Histoire naturelle des principales productions de l'Europe Méridionale et particulièrement de celle des environs de Nice et des Alpes Maritimes*, vol. 4. vii, 439 pp., 12 pls. F.-G. Levrault, Paris.
- Scarponi, D. & Della Bella, G.** 2010. *Molluschi marini del Plio-Pleistocene dell'Emilia-Romagna e della Toscana. Superfamiglia Conoidea*, vol. 3 – *Conidae II*. 128 pp., 21 pls. L'Editore Piceno, Ancona.
- Seguenza, G.** 1873. Studii stratigrafici sulla formazione pliocenica dell'Italia Meridionale. *Bollettino del Regio Comitato Geologico d'Italia*, **9–10**: 294–300.
- Seguenza, G.** 1875. Studii stratigrafici sulla formazione pliocenica dell'Italia Meridionale. *Bollettino del Regio Comitato Geologico d'Italia*, **7–8**: 199–211.
- Spada, G. & Della Bella, G.** 2010. Identification of *Mangelia striolata*, type species of the genus *Mangelia* Risso, 1826. *Bollettino Malacologico*, **46**: 76–83.
- St. John Burton, E.** 1933. Faunal horizons of the Barton Beds in Hampshire. *Proceedings of the Geologists' Association*, **44**: 131–167.
- Swainson, W.** 1840. *A treatise on malacology or shells and shell-fish.* viii, 419 pp. Longman et al., London.
- Tucker, J.K.** 2004. Catalog of Recent and fossil turrids (Mollusca: Gastropoda). *Zootaxa*, **682**: 1–1295.

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Case 3531***Sematura* Dalman, 1825 (Insecta, Lepidoptera, SEMATURIDAE):
proposed precedence over *Mania* Hübner, 1821**

Matthew J.W. Cock

CABI, Rue des Grillons 1, CH-2800 Delémont, Switzerland
(e-mail: m.cock@cabi.org; mjwcock@btinternet.com)

Gerardo Lamas

Departamento de Entomología, Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Av. Arenales 1256, Apartado 14-0434, Lima-14, Peru (e-mail: glamasm@unmsm.edu.pe; paititia@yahoo.com)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic name *Sematura* Dalman, 1825 (Lepidoptera, SEMATURIDAE) which is well-established for a small number of moths widespread in the Neotropical region. Because it is also the type genus of the small family SEMATURIDAE, it is usually cited or illustrated in general works on Lepidoptera and insects in the region. The name is threatened by its rarely used senior subjective synonym, *Mania* Hübner, 1821, which dropped out of use because it was incorrectly considered to be an unavailable homonym. It is proposed that *Sematura* Dalman be given precedence over *Mania* Hübner under the plenary power of the Commission, in the interest of nomenclatural stability.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; SEMATURIDAE; *Sematura*; *Mania*; *Nothus*; *Sematura lunus*; *Mania empedoclararia*; moths; Neotropical Region.

1. The Lepidoptera family SEMATURIDAE contains a small number of species from the Neotropical region and South Africa. It is based on the generic name *Sematura* Dalman, 1825 (p. 407), which has been widely used in the limited literature on this family since the middle of the 19th century. An earlier available name, *Mania* Hübner, 1821, which had been thought to be unavailable, now threatens the stability of the type genus of this family.

2. *Mania* was established by Hübner (1821, p. [3]) for the single species *Lars empedoclararia* Hübner, [1819], a junior subjective synonym of *Papilio empedocles* Cramer, 1779 (Fletcher, 1979), although it has also been considered a junior subjective synonym of *Phalaena lunus* Linnaeus, 1758 (p. 508) (Hampson, 1918, p. 368).

3. Westwood (1879, p. 510) incorrectly considered *Mania* Hübner, 1821 to be a junior homonym of *Mania* Treitschke, 1825 (p. 294), and introduced the replacement name *Manidia*. However, *Mania* Hübner pre-dates *Mania* Treitschke, so Westwood's replacement was unjustified.

4. *Sematura* was established by Dalman (1825, p. 407) to include *Phalaena lunus* Linnaeus, 1758 (p. 508), *Papilio aegisthus* Fabricius, 1781 (p. 20) and *Papilio*

empedocles Cramer, 1779 (p. 11). Guenée (1857, pp. 16–19) used the genus *Sematura*, listing *Mania* as a synonym, to include the species *Phalaena lunus*, *Sematura selene* Guenée, 1857, *S. diana* Guenée, 1857, *Papilio empedocles* and *S. phoebe* Guenée, 1857. Hampson (1918, p. 367) incorrectly referred to *Sematura* as Guenée's genus, but nevertheless selected as its type species *Phalaena lunus*.

5. Several authors have used the generic name *Nothus* Billberg (1820, p. 85) for *Phalaena lunus* and *Papilio empedocles*, but *Nothus* is a junior homonym of *Nothus* Olivier, 1811 (p. 383), and also its type species was designated as *Phalaena lunus* by Fletcher (1979), so making it a senior objective synonym of *Sematura*. This invalid homonym is not germane to the status of *Sematura* and *Mania*, but continues to confuse the nomenclature of this genus.

6. The species of *Sematura* have not had the benefit of a recent revision, hence there is continuing uncertainty about the number of species and their identity. Gaede (1930, p. 832) suggested that *empedocles* and *lunus* are likely to be one species, and Forbes (1942, p. 289) treats *lunus* as the male and *empedocles* as the female synonym. In our opinion, although it is quite likely that Linnaeus described the male and Cramer described the female of the same species, this is not a foregone conclusion as there appear to be other similar species in the genus. Until the genus is revised this will not be clear, however all authors have always treated the two specific names as congeneric, and there seems no doubt that the two generic names are subjective synonyms.

7. That being the case, *Mania* has precedence over *Sematura*. However, *Sematura* is in common usage, while *Mania* is almost forgotten. Forbes (1942, p. 289) treats *Mania* and *Manidia* as synonyms of *Sematura*, commenting correctly that '*Mania* Hübner 1823 [sic], is valid over *Mania* Tr. 1825, but only the latter has had any currency in the last century.' More than 50 years later, this is still true.

8. Unfortunately *Sematura* cannot be given precedence over *Mania* under article 23.9.2 of the Code, as *Mania* has been used as valid at least four times since 1899. Kaye (1901, p. 150) used it with *Sematura* placed in brackets afterwards (misspelt as *Semaetura*) for *empedoclaria* (= *empedocles*) and *actaeon* Felder (= *lunus*) in his preliminary list of the moths of Trinidad. In a popular article, Janet (1902, p. 349) referred to *Mania empedoclaria* Hübner as inhabiting '...Haïti et quelques autre [sic] îles des Antilles'. Dyar (1914, p. 244) used it for *lunus* and *empedocles* in his treatment of the moths of the Canal Zone, Panama. Fischer-Sigwart (1923, p. 22) mentioned *Mania lunus* in a list of Brazilian Lepidoptera. Apart from these four instances, all publications located referring to the genus since 1899 have used either *Sematura* (Pagenstecher, 1907; Longstaff, 1912; Pfeiffer, 1917; Hampson, 1918; Jordan, 1923; Eltringham, 1925; Kaye & Lamont, 1927; Eltringham, 1929; Gaede, 1930; Brues & Melander, 1932; Eltringham, 1933; Forbes, 1942; D'Almeida, 1943; Portmann, 1945; Cardoso, 1949; Costa Lima, 1950; Biezanko et al., 1957; Fulton, 1967; Batten & Batten, 1968; Stanek, 1969; Smith, 1972; Dickens, 1974; Sbordoni & Forestiero, 1985; Beutelspacher, 1988, 1992; Scoble, 1992; Minet & Scoble, 1998; Fänger, 1999; Salazar, 2001; Viana & Costa, 2001; Cock, 2003; Núñez, 2004; Corona et al., 2005; Chacón & Montero, 2007; Regier et al., 2008; Heppner, 2008; Mutanen et al., 2010), *Manidia* (Calvert & Calvert, 1917, p. 64) or *Nothus* (Laithwaite et al., 1975; Lamas, 1989; Hogue, 1993; Racheli & Racheli, 1996; Purser & Garnier, 2007; Scott et al., 2010).

9. Internet usage is similarly based on *Sematura* and *Nothus*, with no further use of *Mania* or *Manidia*. Thus, the number of hits with Google for different combinations of *Sematura* spp. together with Lepidoptera on 1 July 2010 was as follows: *Mania lunus* 1; *Mania empedocles* 1; *Manidia lunus* 0; *Manidia empedocles* 0; *Sematura lunus* 110; *Sematura empedocles* 9; *Nothus lunus* 40; *Nothus empedocles* 22. It should be noted that the use of a combination does not mean that this is the accepted name on a given website; it may be listed as a synonym or incorrect name. However, it is clear that *Mania* is not in common usage for the two principal species of *Sematura*.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *Sematura* Dalman, 1825 precedence over the name *Mania* Hübner 1821, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Sematura* Dalman, 1825 (gender: feminine), type species by subsequent designation by Hampson (1918) *Phalaena lunus* Linnaeus, 1758, with the endorsement that it is to be given precedence over *Mania* Hübner, 1821 whenever the two are considered to be synonyms;
 - (b) *Mania* Hübner, 1821 (gender: feminine), type species by monotypy *Lars empedoclaria* Hübner, [1819], with the endorsement that it is not to be given precedence over *Sematura* Dalman, 1825 whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *lunus* Linnaeus, 1758, as published in the binomen *Phalaena lunus*, specific name of the type species of *Sematura* Dalman, 1825;
 - (b) *empedoclaria* Hübner, [1819], as published in the binomen *Lars empedoclaria*, specific name of the type species of *Mania* Hübner, 1821.

References

- Batten, A.G.M. & Batten, A.M. 1968. Seven weeks in Jamaica, winters 1966–1967. *Entomologist's Record and Journal of Variation*, **80**(1): 3–7.
- Beutelspacher, C.R. 1988. Revisión de la familia Uraniidae (Insecta: Lepidoptera) en México. *Anales del Instituto de Biología. Universidad Nacional Autónoma de México (Zoología)*, **58**(1): 265–325.
- Beutelspacher, C.R. 1992. Catálogo de la Colección Roberto Müller (Lepidoptera: Heterocera) del Museo de Historia Natural de la Ciudad de México. *Cuadernos. Instituto de Biología. Universidad Nacional Autónoma de México*, **15**: 1–465.
- Biezanko, C.M., Ruffinelli, A. & Carbonell, C.S. 1957. Lepidoptera del Uruguay. Lista anotada de especies. *Revista de la Facultad de Agronomía. Universidad de la República (Montevideo)*, **46**: 1–152.
- Billberg, G.J. 1820. *Enumeratio insectorum in Museo Gust. Joh. Billberg*. 138 pp. Typis Gadelianis, Holmiae [= Stockholm], Sweden.
- Brues, C.T. & Melander, A.L. 1932. Classification of insects. A key to the known families of insects and other terrestrial arthropods. *Bulletin of the Museum of Comparative Zoology at Harvard College*, **73**: 1–672.
- Calvert, A.C.S. & Calvert, P.P. 1917. *A year of Costa Rican natural history*. xxii, 577 pp. The Macmillan Company, New York.
- Cardoso, A.S. 1949. Lepidópteros de Alagoas. *Revista de Entomologia (Rio de Janeiro)*, **20**(1/3): 427–436.

- Chacón, I.A. & Montero, J.J.** 2007. *Mariposas de Costa Rica. Butterflies and moths of Costa Rica*. 366 pp. Instituto Nacional de Biodiversidad, Santo Domingo de Heredia.
- Cock, M.J.W.** (2003) On the number of species of moths (Lepidoptera) in Trinidad and Tobago. *Living World, Journal of the Trinidad and Tobago Field Naturalists' Club*, **2003**: 49–58.
- Corona, A.M., Acosta, R. & Morrone, J.J.** 2005. Estudios biogeográficos en insectos de la Zona de Transición Mexicana. Pp. 71–87 in Morrone, J.J. & Llorente Bousquets, J. (Eds.), *Componentes bióticos principales de la Entomofauna Mexicana. Volumen 1*. Las Prensas de Ciencias, UNAM, Mexico.
- Costa Lima, A. da.** 1950. *Insetos do Brasil, 6.º Tomo. Lepidópteros 2.ª Parte*. 420 pp. Escola Nacional de Agronomia, Rio de Janeiro.
- Cramer, P.** 1779. *De uitlandsche Kapellen voorkomende in de drie Waereld-Deelen Asia, Africa en America – Papillons exotiques des trois parties du monde l'Asie, l'Afrique et l'Amerique*, part 17. 11–20 pp. J. van Schoonhoven, Amsterdam.
- Dalman, J.W.** 1825. Försök att närmare bestämma släktet *Castnia* Fabr., samt de detsamma tillhörande Arter. *Kongl. Vetenskaps-Academiens Handlingar*, **1824**(2): 392–407.
- D'Almeida, R.F.** 1943. Sobre a nomenclatura de alguns grupos superiores da Ordem Lepidoptera. 2.a nota: Famílias Lasiocampidae, Lymantriidae, Mimallonidae e Uraniidae e superfamília Arctioidea. *Arquivos do Museu Paranaense*, **3**: 131–143.
- Dickens, M.** 1974. *The world of moths*. 128 pp. The Macmillan Company, New York.
- Dyar, H.G.** 1914. Report on the Lepidoptera of the Smithsonian Biological Survey of the Panama Canal Zone. *Proceedings of the United States National Museum*, **47**: 139–350.
- Eltringham, H.** 1925. On a new sense organ in certain Lepidoptera. *Transactions of the Entomological Society of London*, **1925**: 7–9, plate II.
- Eltringham, H.** 1929. On a new organ in certain Lepidoptera. *Transactions of the Entomological Society of London*, **77**: 471–473.
- Eltringham, H.** 1933. *The senses of insects*. ix, 126 pp. Methuen & Co. Ltd., London.
- Fabricius, J.C.** 1781. *Species Insectorum exhibentes eorum differentias specificas, synonyma auctorum, loca natalia, metamorphosin adiectis observationibus, descriptionibus*, vol. 2. 517 pp. C.E. Bohnii, Hamburgi & Kilonii.
- Fänger, H.** 1999. Comparative morphology of tergal phragmata occurring in the dorsal thoraco-abdominal junction of ditrysian Lepidoptera (Insecta). *Zoomorphology*, **119**(3): 163–183.
- Fischer-Sigwart, H.** 1923. Schmetterlinge vom Amazonenstrom in Brasilien im Zofinger Museum. *Societas Entomologica*, **38**(6): 21–23.
- Fletcher, D.S.** 1979. *The generic names of moths of the world. Volume 3. Geometroidea*. 263 pp. British Museum (Natural History), London.
- Forbes, W.T.M.** 1942. The Lepidoptera of Barro Colorado Island, Panama. No. 2. *Bulletin of the Museum of Comparative Zoology*, **90**: 265–406, pls 9–16.
- Fulton, M.** 1967. A list of Lepidoptera collected in Costa Rica. *Revista de Biología Tropical* (San José), **14**(2): 287–292.
- Gaede, M.** 1930. Uranidae. Pp. 829–837, pls. 138–139 in Seitz, A. (Ed.), *The Macrolepidoptera of the world; a systematic description of the hitherto known Macrolepidoptera, ed. in collaboration with well-known specialists. Volume 6*. A. Kernen, Stuttgart.
- Guenée, A.** 1857. Uranides et Phalénites Tome 1. In Boisduval, [J.A.] & Guenée, [A.] *Histoire naturelle des insectes; espèces général des lépidoptères. Tome IX*. 514 pp. Roret, Paris.
- Hampson, G.F.** 1918. Some small families of the Lepidoptera which are not included in the key to the families in the catalogue of Lepidoptera Phalaenae, a list of the families and subfamilies of the Lepidoptera with their types and a key to the families. *Novitates Zoologicae*, **25**(2): 366–394.
- Heppner, J.B.** 2008. American swallowtail moths (Lepidoptera: Sematuridae). P. 149 in Capinera, J.L. (Ed.), *Encyclopedia of entomology, 2nd edition*. Springer, Netherlands.
- Hogue, C.L.** 1993. *Latin American insects and entomology*. xiv, 536pp. University of California Press, Berkeley and Los Angeles, California.
- Hübner, J.** 1821. *Index exoticorum lepidopterorum, in foliis 244 a Jacobo Hübner hactenus effigiatorum; adjectis denominationibus emendatis, tam communioribus quam exactioribus*. 7 pp. The author, Augsburg.

- Janet, A. 1902. Les Papillons. *Causeries scientifiques de la Société Zoologique de France*, **1**(9): 309–350, 1 plate.
- Jordan, K. 1923. On a sensory organ found on the head of many Lepidoptera. *Novitates Zoologicae*, **30**(1): 155–158.
- Kaye, W.J. 1901. A preliminary catalogue of the Lepidoptera Heterocera of Trinidad. *Transactions of the Entomological Society of London*, **1901**: 115–158, pls. 5–6.
- Kaye, W.J. & Lamont, N. 1927. A catalogue of the Trinidad Lepidoptera Heterocera (moths). *Memoirs of the Department of Agriculture, Trinidad and Tobago*, **3**: 1–144.
- Laithwaite, E., Watson, A. & Whalley, P.E.S. 1975. *The dictionary of butterflies and moths in colour*. 298 pp. George Rainbird Ltd., London.
- Lamas, G. 1989. Lista preliminar de los Saturniidae, Oxytenidae, Uraniidae y Sematuridae (Lepidoptera) de la Zona Reservada de Tambopata, Madre de Dios, Perú. *Revista Peruana de Entomología*, **31**: 57–60.
- Linnaeus, C. 1758. *Systema naturæ per regna tria naturæ, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata*. pp. [1–4], 1–824. Salvius, Holmiæ [=Stockholm].
- Longstaff, G.B. 1912. *Butterfly-hunting in many lands. Notes of a field naturalist*. xx, 729 pp. Longmans, Green & Co., London.
- Minet, J. & Scoble, M.J. 1998. 17. The Drepanoid / Geometroid assemblage. Pp. 301–320 in Kristensen, N.P. (Ed.), *Lepidoptera, butterflies and moths. Vol. 1. Evolution, systematics and biogeography*. Handbook of Zoology, Volume 4. Arthropoda: Insecta, Part 35. Walter de Gruyter Inc. New York.
- Mutanen, M., Wahlberg, N. & Kaila, L. 2010. Comprehensive gene and taxon coverage elucidates radiation patterns in moths and butterflies. *Proceedings of the Royal Society (B)*, **277**(1695): 2839–2848.
- Núñez, R. 2004. Lepidoptera (Insecta) de Topes de Collantes, Sancti Spiritus, Cuba. *Boletín de la Sociedad Entomológica Aragonesa*, **34**: 151–159.
- Olivier, G.A. 1811. *Encyclopédie méthodique: Histoire naturelle. Insectes*, vol. 8. 722 pp. H. Agasse, Imprimeur-Libraire, Paris.
- Pagenstecher, A.A.F. 1907. Die Lepidopterenfauna der Antillen. *Jahrbücher des Nassauischen Vereins für Naturkunde*, **60**: 91–102.
- Pfeiffer, L. 1917. Bemerkungen über einige von Herrn A. H. Fassl in Columbien gefangene *Castnia*-, *Urania*- und *Homidiana*-Arten. *Entomologische Zeitschrift*, **31**(3): 11–12.
- Portmann, A. 1945. *The beauty of butterflies*. 11 pp. Iris Books, New York.
- Purser, B.H. & Garnier, M. 2007. La lépidofaune guyanaise – Originalité et abondance. Pp. 6–12 in Lacomme, D. & Manil, L. (Eds.), *Lépidoptères de Guyane. Tome 1. Généralités – Bibliographie. Hétérocères 1. Lépidoptéristes Parisiens*, Paris.
- Racheli, L. & Racheli, T. 1996. Note preliminari sugli Oxytenidae e Sematuridae dell'Ecuador (Lepidoptera). *Bollettino della Società Entomologica Italiana*, **128**(2): 151–154.
- Regier, J.C., Cook, C.P., Mitter, C. & Hussey, A. 2008. A phylogenetic study of the 'bombycoid complex' (Lepidoptera) using five protein-coding nuclear genes, with comments on the problem of macrolepidopteran phylogeny. *Systematic Entomology*, **22**(1): 175–189.
- Salazar, J.A. 2001. Contribución al conocimiento de las especies pertenecientes a los géneros *Homidiana* Strand y *Sematura* Dalman (Lepidoptera: Sematuridae) de Colombia. *Boletín Científico, Museo de Historia Natural, Universidad de Caldas*, **5**: 125–126.
- Sbordoni, V. & Forestiero, S. 1985. *The world of butterflies*. 312 pp. Blandford Press, Dorset.
- Schmid, M. & Endicott, B.M. 1968. *Mariposas de Venezuela*. xi, 67 pp. L. Levison Junr., Copenhagen.
- Scoble, M.J. 1992. *The Lepidoptera: form, function and diversity*. 404 pp. Oxford University Press, Oxford.
- Scott, J.L., Kawahara, A.Y., Skevington, J.H., Yen, S.-H., Sami, A., Smith, M.L. & Yack, J.E. 2010. The evolutionary origins of ritualized acoustic signals in caterpillars. *Nature Communications*, **1**(4): 1–9.
- Smith, N.G. 1972. Migrations of the day-flying moth *Urania* in Central and South America. *Caribbean Journal of Science*, **12**: 45–48.

- Stanek, V.J. 1969. *The pictorial encyclopedia of insects*. 544 pp. Hamlyn, London.
- Treitschke, [G].F. 1825. *Die Schmetterlinge von Europa*, vol. 5(1). xvi, 414 pp. Gerhard Fleischer, Leipzig.
- Viana, T.M.B. & Costa, E.C. 2001. Lepidópteros associados a duas comunidades florestais em Itaara, RS. *Ciência Florestal* (Santa Maria), **11**(1): 67–80.
- Westwood, J.O. 1879. Observations on the Uraniidae, a family of lepidopterous insects, with a synopsis of the family and a monograph of *Coronidia*, one of the genera of which it is composed. *Transactions of the Zoological Society*, **10**: 507–542, pls. 85–88.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3503

***Papilio hesperus* Westwood, 1843 (Insecta, Lepidoptera, PAPILIONIDAE): proposed conservation by the suppression of *Papilio hesperus* Fabricius, 1793 (NYMPHALIDAE)**

Torben B. Larsen

Jacobys alle 2, 1806 Frederiksberg C, Denmark
(e-mail: torbenlarsen@btinternet.com)

Masaya Yago

The University Museum, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan (e-mail: myago@um-u-tokyo.ac.jp)

R.I. Vane-Wright

Department of Entomology, the Natural History Museum, Cromwell Road, London SW7 5BD, UK; and Durrell Institute of Conservation and Ecology, University of Kent, Canterbury CT2 7NR, U.K.
(e-mail: dickvanewright@btinternet.com)

Mark Williams

PO Box 12538, Onderstepoort 0110, South Africa
(e-mail: mark.williams@up.ac.za)

Kyoichiro Ueda

Kitakyushu Museum of Natural History and Human History, 2-4-1 Higashida, Yahatahigashi-ku, Kitakyushu 805-0071, Japan
(e-mail: ueda@kmnh.jp)

Takashi Yokochi

1-10-26 Shonan, Owariasahi, Aichi 488-0823, Japan
(e-mail: tyokochi@ga2.so-net.ne.jp)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the name *Papilio hesperus* Westwood, 1843 (Lepidoptera, PAPILIONIDAE) for a well-known species of butterfly. In 1995 it was proposed to ask the Commission to suppress *Papilio hesperus* Fabricius, 1793 (Lepidoptera, NYMPHALIDAE) in order to conserve *Papilio hesperus* Westwood, 1843 (Lepidoptera, PAPILIONIDAE), but a formal application was never made. The senior name has not otherwise been used except as a junior synonym of *Papilio daedalus* Fabricius, 1775, or in inconclusive discussions, for 200 years or more. Accepting its seniority would be very disruptive to taxonomic stability of butterfly names in much of the African rainforest zone. The suppression of *Papilio hesperus* Fabricius, 1793 for the purposes of both the Principle of Homonymy and the Principle of Priority would coincidentally also serve to conserve the name *Harma chalcis* C. & R. Felder, 1860, which is in widespread use in much of Africa in the combination *Euryphura chalcis*.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; NYMPHALIDAE; PAPILIONIDAE; *Papilio*; *Hamanumida*; *Hamanumida daedalus*; *meleagris*; *hesperus*; *phemius*; *chalcis*; Africa.

Introduction

1. *Papilio daedalus* Fabricius, 1775 (p. 482) (currently *Hamanumida daedalus*) has been widely used since its publication for a very characteristic nymphalid butterfly that is common in all Afrotropical countries (d'Abrera, 1980, p. 346). This name has also universally been accepted as a senior synonym of *Papilio melantha* Fabricius, 1775 (p. 513) (type material of *P. melantha* in Banks Collection, Natural History Museum, London). *Papilio dedalus* Cramer, 1775 (currently *Eupalamides cyparissias* (Fabricius, 1777, p. 257); Heterocera, CASTNIIDAE) is a junior homonym of *Papilio daedalus* Fabricius, 1775 under Article 58.1 of the Code, and is considered to have been published 31 December 1775 (see Opinion 516, *Opinions and Declarations*, 19: 1–43, May 1958). *Papilio daedalus* Fabricius, 1775 is a senior synonym of *Papilio meleagris* Cramer [1775, p. 102]. During the 19th century *daedalus* and *meleagris* were both widely used, always for what we now know to be seasonal forms of the same species. Drury [1782] gave a good illustration of the latter, thus popularising the name *meleagris*.

2. Hübner [1819, p. 18] placed *Papilio meleagris* in his new genus *Hamanumida* together with several other species that were completely unrelated, but he designated no type species and did not mention *P. daedalus* or *P. hesperus*.

3. *Papilio hesperus* Fabricius, 1793 (p. 47) has also generally been considered a junior synonym of *P. daedalus*, or of uncertain status. There is no type material in the Fabricius Collection (ZMUC, Copenhagen). In his description, Fabricius refers to an illustration made by William Jones from a specimen in Drury's collection. Godart [1824] (p. 327) gave a French translation of the original description and referred to the illustration in 'Jones Icones', placing *hesperus* Fabricius as a species in the genus *Nymphalis* – in which he also placed *P. daedalus* Fabricius, 1775.

4. Westwood [1846–1852] included *P. hesperus* Fabricius, 1793 as a possible member of the Oriental genus *Adolias* Boisduval, 1836 with a question mark, without description and without locality. Westwood also makes reference to 'Jones Icones', which he may have used to reach this conclusion. Moore (1859) included it as sp. 50 in his revision of *Adolias*, referring back to the above works, without any description or further information. No other African species was included in Moore's concept of *Adolias* (currently the Oriental genus *Euthalia* Hübner, [1819]).

5. *Papilio hesperus* Fabricius, 1793 was quoted as a junior synonym of *Aterica daedalus* by Butler [1870], though with the following comment: '... the description of *P. hesperus* is not good, and agrees much better with the female of *Adolias phemius* of Doubleday [currently *Euthalia phemius* (Doubleday, [1848])]' . However, Butler presumably did not see the 'Icones', since neither sex of *E. phemius* could possibly be mistaken for the species figured by Jones (see paras 12, 13, below). Had Butler actually seen the 'Icones', he would certainly have considered it a valid species rather than a potential synonym.



Fig. 1. *Papilio hesperus* Fabricius, 1793 [currently *Euryphura chalcis* (C. & R. Felder, 1860)], figures of syntype in Jones' *Icones* (Oxford University Museum of Natural History), photo by K. Ueda.

6. Kirby's (1871) well-known world catalogue of butterflies placed *P. daedalus* as the only valid species in the genus *Hamanumida* (including *meleagris*, *melantha* and *hesperus* Fabricius as junior synonyms). Scudder (1875, p. 183) considered Kirby's action to be a valid type species restriction for the genus, but Scudder's own deliberate selection of '*P. daedalus* (*meleagris*)' from among all Hübner's putative members of the group should be considered the valid designation of the type species according to Hemming (1967, p. 207). Thus the type species of the genus *Hamanumida* is *Papilio meleagris* Cramer, [1775]. *P. hesperus* Fabricius, 1793 has been treated as a junior synonym of *P. daedalus* in subsequent literature on African Lepidoptera.

7. De Nicéville (1886) mentioned *P. hesperus* Fabricius, 1793 in his list of references under *Euthalia phemius* Doubleday, but also referred to the fact that Butler [1870] placed it as a junior synonym of *Aterica daedalus*. It was not used as a valid name. There will have been additional indecisive discussions in the literature on Oriental butterflies, but we have not seen any from the 20th century.

8. In his influential book, the first to treat the entire known African butterfly fauna, Aurivillius [1899] used *Hamanumida daedalus* as the valid name but treated *meleagris* as a seasonal form 'var. (temp)'. The original descriptions are in accord with this view (*daedalus*: '... alæ subtus ochraceæ, immaculatæ aut obsolete maculæ' [dry season]; *meleagris*: '... alæ subtus ochraceæ, albomaculatæ' [wet season]). Drury's [1782] illustration of *meleagris* has the white-spotted wet season underside that is almost immaculate in the nominate dry season morph. Aurivillius ([1899], 1912, p. 191) made no reference to *P. hesperus* Fabricius, presumably considering this now to be an 'Indian' matter.

9. Shortly after Scudder's designation of the type species, the combination *Hamanumida daedalus* became almost universally used, with *Papilio hesperus* Fabricius, 1793 usually mentioned as a junior synonym. Following Aurivillius [1899], the name *meleagris* fell into disuse, except as an infrasubspecific name for the wet season morph.

Homonymy

10. Despite usually being considered a junior subjective synonym of *P. daedalus* in Africa and its rather confused treatment in the Indian literature, *Papilio hesperus* Fabricius, 1793 (p. 47) remains an available name and is therefore a senior primary homonym of *Papilio hesperus* Westwood, [1843, p. 189]. *Papilio hesperus* Westwood is a majestic swallowtail (PAPILIONIDAE) that is widespread in the rainforests between Nigeria, Uganda and Zambia (d'Abrera, 1980, p. 16). This combination has been used consistently since the description was published more than 150 years ago, although sometimes removed to the genus *Princeps* Hübner, [1807], which is treated as, at best, a subgenus by most authors (e.g. Collins & Morris, 1985; Ackery et al., 1995; Smith & Vane-Wright, 2008).

11. This homonymy was recognised by Ackery et al. (1995) in the authoritative catalogue 'Carcasson's African Butterflies'. The authors stated: 'The name *Papilio hesperus* Westwood has been in widespread use since its establishment. We propose to make a case to the I.C.Z.N. to here set aside the principle of priority, in order to maintain stability by conserving *P. hesperus* Westwood as a valid nominal taxon'. The plea on *P. hesperus* Westwood was also followed by later researchers (e.g. Larsen, 2003, 2005; Zakharov et al., 2004). Such an application has not yet been made, but is still necessary for nomenclatural stability. If *P. hesperus* Westwood cannot be used, its replacement would be *Papilio horribilis* var. *calabaricus* Distant, 1879 (p. 649). Although *calabaricus* was originally described as a variety and has not been in use as a valid name since 1899, because it was published before 1961 and its author did not give it infrasubspecific rank (Article 45.6.4), it is available.

Discussion

12. We recently discovered that the specimen illustrated in the original Jones' Icones in Oxford (Jones, before summer 1787: see Vane-Wright & Gaonkar, 2006; Vane-Wright, 2010) to which the description of *Papilio hesperus* Fabricius, 1793 refers is very different from his *Papilio daedalus* (for an account of the otherwise unpublished Jones' Icones, see Waterhouse, 1938); this combination cannot be considered a junior synonym thereof. The specimen is not in the Banks Collection at the Natural History Museum, London, nor in the Hunterian Museum, Glasgow, but not all the paintings in the 'Icones' were based on material that formed part of those collections. One of the most frequent sources that Jones used was that of another London-based collector, Dru Drury – whom Jones clearly indicates as the source of his illustration. The most likely depository for Drury specimens is the Macleay collection in Sydney, Australia – but only a small proportion of his material survives there (Hancock et al., 2008), and no original *P. hesperus* Fabricius material has been located.

13. Jones's illustration was, as usual, of exceptional accuracy (e.g. Vane-Wright & Gaonkar, 2006; Vane-Wright, 2010). The specimen of *Papilio hesperus* Fabricius, 1793 figured in the 'Icones' and referenced in the original description is without doubt a male of *Harma chalcis* C. & R. Felder, 1860 from 'Guinea'. Though this species is actually compatible with Fabricius's summary description, no-one ever made this suggestion before. Butler [1870] would certainly have done so (see para. 3) had he actually seen the 'Icones' at the time, since the Felders' work was well known to him by then. *Harma chalcis* is now placed in the genus *Euryphura* Staudinger, 1891, and is widely distributed

throughout the African rainforest zone. The name *chalcis* has been consistently used since it was described in 1860 in various publications and, since 1891, nearly always as *Euryphura chalcis* – although Ackery et al. (1995) treated *Euryphura* as a subgenus of *Euriphene* Boisduval, 1847. It has sometimes been confused with *Euryphura plautilla* (Hewitson, 1865). Under the provisions of Article 23.9.1 of the Code, the condition of Article 23.9.1.1 is met in the case of *P. hesperus* Fabricius, since the name is a senior synonym of *E. chalcis* and has not been used as a valid name after 1899. However, *E. chalcis* has not been used in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years (the list is held by the Secretariat), so the condition of Article 23.9.1.2 is not met. Thus we consider that the use of *P. hesperus* Fabricius (the senior synonym) would threaten stability or universality, and so wish to maintain use of *E. chalcis* (the junior synonym) under the provision of Article 23.9.3.

14. *Papilio hesperus* Fabricius, 1793 has effectively never been used except as a synonym of *Papilio daedalus* or given uncertain status before 1899, as mentioned above (paras 3, 4, 13). *Papilio hesperus* Westwood, 1843, on the other hand, is at present widely used (a list of 53 publications using this combination, the status of which has never been questioned, is held by the Secretariat). It is also well-established as the name for a species-group of four or five similar, largely allopatric swallowtails (the *Papilio hesperus*-group: e.g. Berger, 1950; Munroe, 1961; Hancock, 1983; Zakharov et al., 2004). The term was used earlier in a slightly wider sense by Aurivillius (1899, p. 16), and in 'Seitz' (Aurivillius, 1908, p. 16).

15. The suppression of *Papilio hesperus* Fabricius, 1793 would serve to avoid significant confusion concerning the well-known *Papilio hesperus* Westwood, 1843, the *Papilio hesperus*-group, and the subspecific name associated with the species. It would also dispel any doubt as to the continued validity of *Euryphura chalcis* (C. & R. Felder, 1860), or the recurrence of the name *hesperus* in discussions on Oriental *Euthalia* Hübner, [1819] (formerly *Adolias*). There would be no negative consequences; interpretation of all existing literature would remain unaffected. However, *P. hesperus* Fabricius remains a primary homonym. Under the provisions of Article 23.9.1 of the Code, the condition of Article 23.9.1.1 is met for conserving *P. hesperus* Westwood, but that of Article 23.9.1.2 is not met, as in *E. chalcis*.

16. Under the provisions of Articles 23.9.1 and 23.9.2 of the Code, it would be possible to conserve the homonymous name *P. hesperus* Westwood by declaring it a nomen protectum, without requiring a ruling by the Commission. However, the condition of Article 23.9.1.2 is not met in the case of the synonymous name *E. chalcis*, so a strict application of the Code would require replacing this name with its senior synonym, unless the senior name is suppressed under Article 23.9.3. If the Fabrician name were not suppressed, then its resurrection, as *Euryphura hesperus* (Fabricius, 1793), would necessitate a Commission ruling under Article 23.9.5 to conserve Westwood's name, since Article 23.9.1.1 would no longer be satisfied. Therefore, in order to maintain nomenclatural stability and to reduce potential future confusion, it is proposed that the name *Papilio hesperus* Fabricius, 1793, be suppressed under Article 23.9.3 of the Code.

17. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *hesperus* Fabricius, 1793, as published in the binomen *Papilio hesperus*, for the purposes of both the Principle of Priority and the Principle of Homonymy;

- (2) to place on the Official List of Specific Names in Zoology the name *hesperus* Westwood, 1843, as published in the binomen *Papilio hesperus*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *hesperus* Fabricius, 1793, as published in the binomen *Papilio hesperus* and as suppressed in (1) above.

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References

- Ackery, P.R., Smith, C.R., & Vane-Wright, R.I. (Eds.). 1995. *Carcasson's African butterflies: an annotated catalogue of the Papilionoidea and Hesperioidea of the Afrotropical Region*. xi, 803 pp. CSIRO Australia, Canberra.
- Aurivillius, [P.O.]C. 1899. Rhopalocera Aethiopica. Die Tagfalter des Aethiopischen Faunengebietes. Eine Systematisch-Geographische Studie. *Kungliga Svenska Vetenskaps-Akademiens Handlingar*, 31(5): 1–561.
- Aurivillius, [P.O.]C. 1908–1925. 1. The African Rhopalocera. In Seitz, A. (Ed.), *Die Gross-Schmetterlinge der Erde*, vol. (2)13, vii, 613 pp., 80 pls. F. Lehmann/A. Kernen, Stuttgart.
- Berger, L.A. 1950. Catalogues raisonnés de la faune entomologique du Congo Belge Lépidoptères-Rhopalocères 1. – Fam. Papilionidae. *Annales du Musée Royal du Congo Belge. C-Zoologie*, (3) 8(1): 1–102.
- Boisduval, J.B.A. 1836. In [Roret, Suites à Buffon] *Histoire naturelles des Insectes. Species général des Lépidoptères*, vol. 1: [iv], xii, 690, 6 pp., 24 pls. Librairie Encyclopédique de Roret, Paris.
- Boisduval, J.B.A. 1847. Catalogue des Lépidoptères recueillis par M. Delegorgue pendant les années 1838–1844 à Port-Natal, au pays de Amazoulous et dans la contrée de Massilicatzi. In Delegorgue, A., *Voyage dans l'Afrique australe* vol. 2. Pp. 585–602. A. René, Paris.
- Butler, A.G. [1870]. *Catalogue of diurnal Lepidoptera described by Fabricius in the collection of the British Museum* [vi], 303 pp. British Museum, London.
- Collins, N.M. & Morris, M.G. 1985. Threatened swallowtail butterflies of the world. The IUCN Red Data Book. IUCN, Gland, Switzerland.
- Cramer, P. [1775–1776]. *De Uitlandsche Kapellen voorkomende in de drie Waereld-Deelen Asia, Africa en America*. Vol. I. [vi], xxx, 16 pp., 155 pp., 96 pls. S.J. Baalde, Amsteldam/B. Wild, Utrecht.
- d'Abrera, B. 1980. *Butterflies of the Afrotropical region*. xx, 593 pp. Lansdowne Press, Melbourne.
- de Nicéville, L. 1886. *The butterflies of India, Burmah and Ceylon*, vol. 2. vii, 332 pp., 8 pls. Calcutta Central Press, Calcutta.
- Distant, W.L. 1879. On some African species of the lepidopterous genus *Papilio*. *Proceedings of the Scientific Meetings of the Zoological Society of London*, 1879: 646–649.
- Drury, D. 1782. *Illustrations of natural history*, vol. 3. xxviii, 76, 2 pp., 50 pls. B. White, London.
- Fabricius, J.C. 1775 [17 April]. *Systema Entomologiae* [xxxii], 1–832. Flensburgh & Leipzig, Library Kortii.
- Fabricius, J.C. 1793. *Entomologia systematica emendata et aucta*, 3 (1): [vi], 1–488. C.G. Proft, Copenhagen.
- Felder, C. & Felder, R. 1860. Lepidopterologische Fragmente. *Wiener Entomologische Monatschrift*, 4: 225–251.
- Godart, J.B. 1819–1824. In Latreille, P.A. & Godart, J.B., *Encyclopédie méthodique, Histoire naturelle des insectes*, vol. 9. 828 pp. Veuve Agasse, Paris.
- Hancock, D.L. 1983. Classification of the Papilionidae (Lepidoptera): a phylogenetic approach. *Smithersia*, 2: 1–48.

- Hancock, E.G., Broadsmith-Brown, G., Douglas, A.S. & Vane-Wright, R.I.** 2008. William Hunter's Museum and discovery of the Madagascan pipevine swallowtail butterfly, *Pharmacophagus antenor* (Drury, 1773). *Antenna*, **32**(1): 10–17.
- Hemming, F.** 1967. The generic names of the butterflies and their type-species (Lepidoptera: Rhopalocera). *Bulletin of the British Museum (Natural History) (Entomology)*, Supplement, **9**: 1–509.
- Hübner, J.** [1806–1819]. *Sammlung exotischer Schmetterlinge*, **1**: [vi], 213 pls. J. Hübner, Augsburg.
- Hübner, J.** [1816–1826]. *Verzeichniss bekannter Schmetterlinge*. 431+72 pp. J. Hübner, Augsburg.
- Jones, W.** [dates uncertain]. 'Icones' – a roll of 35 mm slides (*ca* 1979), of which few exist, depicting *ca* 1500 paintings of butterflies by Jones *ca* 1780–1810 [The originals were donated to Oxford University around 1925–1933 by a descendant of William Jones]. Oxford University Museum of Natural History. [The specific images referred to here were evidently published prior to summer 1787: see Vane-Wright & Gaonkar, 2006, p. 297, and Vane-Wright, 2010.]
- Kirby, W.F.** 1871. *A synonymic catalogue of the diurnal Lepidoptera*. viii, 690 pp. Van Voorst, London.
- Larsen, T.B.** 2003. The Emperor Swallowtails (*Papilio hesperus* Westwood, 1843 and *P. horribilis* Butler, 1874) in West Africa (Lepidoptera, Papilionidae). *Entomologists' Record and Journal of Variation*, **115**: 189–192.
- Larsen, T.B.** 2005. *Butterflies of West Africa*. 2 vols., 596 pp, 125 pls. Apollo Books, Stenstrup, Denmark.
- Moore, F.** 1859. A Monograph of the genus *Adolias*, a genus of diurnal Lepidoptera belonging to the family Nymphalidae. *Transactions of the Entomological Society of London*, New series, **5**: 62–87.
- Munroe, E.** [1961]. The classification of the Papilionidae (Lepidoptera). *Canadian Entomologist, Supplements*, **17**: 1–51.
- Scudder, S.H.** 1875. Historical sketch of the generic names proposed for butterflies – a contribution to systematic nomenclature. *Proceedings of the American Academy of Arts and Sciences* (Boston), **10**: 91–293.
- Smith, C.R. & Vane-Wright, R.I.** 2008. Classification, nomenclature and identification of lime swallowtail butterflies: a post-cladistic analysis (Lepidoptera: Papilionidae). *Systematics and Biodiversity*, **6**(2): 175–203.
- Staudinger, O.** 1891. Neue exotische Lepidopteren. *Deutsche Entomologische Zeitschrift, Iris*, **4**: 61–157.
- Vane-Wright, R.I.** 2010. William Jones of Chelsea (1745–1818), and the need for a digital, online 'Icones'. *Antenna*, **34** (1): 16–21.
- Vane-Wright, R.I. & Gaonkar, H.** 2006. The *Arhopala* butterflies described by Fabricius: *A. centaurus* is from Java, *A. democritus* from Phuket (Lepidoptera: Lycaenidae). *Entomological Science*, **9**: 295–311.
- Waterhouse, D.F.** 1938. Notes on Jones' Icones (Lepidoptera). With footnotes and appendix by Sir Edward Poulton. *Proceedings of the Royal Entomological Society of London (A)*, **13**: 9–17.
- Westwood, J.O.** [1842–1843]. *Arcana Entomologica; or illustrations of new, rare, and interesting species*, vol. 1. iv, 192 pp. W. Smith, London.
- Westwood, J.O.** [1846–1852]. In Doubleday, E. & Westwood, J.O. *The genera of diurnal Lepidoptera*, vol. 2. Pp. 251–534, pls. 31–80, Suppl. pl. Longman, Brown, Green & Longmans, London.
- Zakharov, E.V., Caterino, M.S. & Sperling, F.A.H.** 2004. Molecular phylogeny, historical biogeography, and divergence time estimates for swallowtail butterflies of the genus *Papilio* (Lepidoptera: Papilionidae). *Systematic Biology*, **53**: 193–215.

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Case 3527

***Anguis jamaicensis* Shaw, 1802 (currently *Typhlops jamaicensis*; Reptilia, Serpentes): proposed conservation of the specific name by ruling that it is not to be treated as a replacement name for *A. lumbricalis* Linnaeus, 1758 (currently *T. lumbricalis*) and the designation of neotypes for both taxa**

Michel Domínguez

Centro Iberoamericano de la Biodiversidad (CIBIO), Universidad de Alicante, Edificio de Ciencias III, Campus San Vicente del Raspeig, 03080, Alicante, Spain (e-mail: micheldd@hotmail.es)

Raúl E. Díaz, Jr.

University of Kansas Medical Center, Kansas City, KS 66160, U.S.A.

Abstract. The purpose of this application, under Article 78.1 of the Code, is to conserve the usage of the specific names *Anguis lumbricalis* Linnaeus, 1758 and *Anguis jamaicensis* Shaw, 1802 for two species of blind snake from the Caribbean. As published both taxa were composite and the name *A. jamaicensis* was a replacement for *A. lumbricalis*. The name *Typhlops lumbricalis* has consistently been used for a species from Cuba, Isla de Juventud and Bahamas, and *T. jamaicensis* is used for a species from Jamaica. A neotype is designated for *T. lumbricalis* and it is proposed that a neotype be designated for *T. jamaicensis* in accord with accustomed usage. *Typhlops lumbricalis* is the type species of *Typhlops* Oppel, 1811, a genus with a distribution in Europe, Africa, Asia, Central and South America and some 140 species.

Keywords. Nomenclature; taxonomy; Reptilia; Serpentes; TYPHLOPIDAE; *Typhlops lumbricalis*; *Typhlops jamaicensis*; blind snakes; West Indies; Bahamas; Cuba; Jamaica.

1. Linnaeus (1758, p. 228) briefly described the blind snake *Anguis lumbricalis*: [middorsal scale count] ‘230–7, Color ex albido flavescens’ and stated that it occurred in America. Linnaeus did not mention this species in either of his accounts of specimens in the Swedish King Adolf Fredrik’s cabinet (1754 and 1764) and there are no specimens either in the King’s collection in the Naturhistoriska Riksmuseet in Stockholm or the Evolutionsmuseet, University of Uppsala. Furthermore, there are no specimens of this species among Linnaeus’s own material in Uppsala or in the Linnean Society’s collection in London.

2. Linnaeus (1758) cited three earlier references: Seba (1734, p. 137, pl. 86, fig. 2), Browne (1756, p. 460, pl. 44, fig. 1), and Gronovius (1756, p. 52, no. 3). Under Article 72.4.1 of the Code, these references form an integral part of Linnaeus’s description of *Anguis lumbricalis* and all the material on which the descriptions and/or illustrations

of the other authors were based is syntypic, whether or not it was examined by Linnaeus and whether or not it still exists. Linnaeus's own description, those of the earlier authors cited by him and their specimens are all of equal status and together they constitute the basis on which the name is made available.

3. Seba (1734, p. 137, no. 2, pl. 86, fig. 2) described his taxon as 'cinereo luteus' and provided an illustration; he did not, however, give scale counts or length measurements. His text was published in both Latin and Dutch and Latin and French. The Latin and Dutch versions record the species as 'Caecilia, ex Mauritania' and 'Cecilia, a blinde slang van Mauretanië', respectively. In the French version, however, the species was recorded as 'Aveugle de la Nigritié'. The 'Nigritié' is a region that currently includes several West and Central African countries. In accordance with the distribution given by Seba and his illustration, his species could be a member of either the TYPHLOPIDAE or the LEPTOTYPHLOPIDAE. A correct identification is very difficult because the scalation pattern is not clear and there are no known specimens attributable to Seba.

4. Browne (1756, p. 460, pl. 44, fig. 1) described a blind snake 'Amphisbaena subargentea' (silver snake) from Jamaica. He noted 'This reptile seldom exceeds sixteen inches in length, and grows gradually thicker from the snout to the end of the tail; but the anus is placed so near this part both in this and some others of the same kind, that it has been frequently mistaken for the mouth, which has given rise to the name *Amphisbaena*, by which all the species are now commonly known'. In Browne's illustration, the head scalation pattern is more detailed and his species is clearly that later called *Anguis jamaicensis* by Shaw (1802). Browne's name *Amphisbaena subargentea* became available with the publication of the second edition of his work in 1789; the text is the same as in the first edition but in the index and figures he used binominal nomenclature. Browne's (1789) work was suppressed in Opinion 89 (December 1925) and placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature in Direction 32 (May 1956). Non-adoption of Browne's names in the 19th century and suppression of his work at an early date are no doubt the reason why his names, including *subargentea*, have not been used by later authors.

5. Gronovius (1756, p. 52, no. 3) described a specimen or specimens in his own collection. He gave the scale count (230 ventral scales and seven caudal scales), coloration ('albido flavescens') and lengths of the animals. The scale count and coloration were those later published by Linnaeus (1758). Unfortunately Gronovius did not illustrate any of the specimens that he had nor did he give their geographical provenance. Gronovius included references to Seba (1734, p. 137, pl. 86, fig. 2) and Browne (1756, p. 460, pl. 44, fig. 1). The Fish Section of the Natural History Museum, London, contains several specimens identified as Linnaean types which were included among Gronovius's dried fish material bought along with his manuscript at auction in London in 1853 (Günther, 1859–1870; Wheeler, 1958). Unfortunately there was no reptile material in that collection (Colin McCarthy, NHM, London, pers. comm., April 2009). McDiarmid, Campbell & Touré (1999, p. 108) incorrectly stated Gronovius's specimen to be the 'holotype' of *Anguis lumbricalis*.

6. Linnaeus's (1758) name *Anguis lumbricalis* has been used consistently for a species of blind snake found in Cuba, Isla de Juventud, and Bahamas but the taxon was composite when published. Thomas (1989) restricted the 'type locality' to New

Providence Island in the Bahamas. In the absence of evidence that any of Seba's (1734), Browne's (1756), or Gronovius's (1756) material came from there, and the absence of a neotype designated from there, this action was invalid. There is no extant syntype and we therefore designate a neotype. This is specimen KU 273756 (its sex was not identified) collected from 4 miles N and 0.5 miles E of Rock Sound (76°11'02"N, 24°58'02"W, 20 m elevation, datum WGS 84), Eleuthera Island, Bahama Islands, on 7 October 1965 by Richard Thomas and housed at the University of Kansas Natural History Museum & Biodiversity Research Center, Lawrence, Kansas, U.S.A. Of small size, measuring 119 mm snout-vent length (SVL), 4 mm tail length (TL), 4.4 mm midbody diameter (MBD). No distinct neck/cervical region when viewed externally. Head is rounded in dorsal view, not dorsoventrally depressed, almost as long as broad (head width maximum/head length (HWM/HL) is 1.02); rounded snout in dorsal and lateral views; rostral in dorsal view like a narrow oval, slightly broader than long, total length of the dorsal rostral/widest part of the dorsal rostral (RWD/RLD) is 0.57, with slightly pointed apex, non-parallel sides and almost reaching interocular level, postnasal pattern weakly divergent. Single, sub-triangular preocular contacting the third supralabial only, two postoculars, two parietals and four supralabials with T-III imbrications pattern (Figs. 1A, 1B); 20 scale rows anteriorly, reducing to 18 scale rows posteriorly at around midbody. Low middorsal scale counts (256), 13 ventrocaudals. Dorsum and venter colorations are dark brown and lighter brown (cream) in alcohol, respectively. Snout and head are pigmented.

7. Shaw (1802, p. 588, pl. 133) described and illustrated the blind snake *Anguis jamaicensis* from Jamaica as a 'silvery-brownish slow-worm, with the body gradually thickening, and the tail abruptly subacuminate' (also described in Latin). He noted, 'The length of this species, according to Brown [sic], in his History of Jamaica, seldom exceeds sixteen inches, and the diameter of the animal gradually increases from the snout to the tail, which is extremely short, and terminates in a slightly pointed extremity: it is found about the roots of decayed trees, near ants' nests, etc. and though popularly considered as poisonous, is entirely innocuous; its colour is a uniform pale brown, with a kind of silvery gloss on the scales, which are extremely smooth, resembling in some degree those of the scink [sic]'. Shaw cited three references: *Amphisbaena subargentea*. Silver snake. Brown[e], Jam[aica], p. 460, pl. 44, fig. 1. *Serpens Caecilia ex Mauritania* Seba, 1, pl. 87, fig. 2 [recte pl. 86, fig. 2]. *Anguis lumbricalis?* Lin[naeus] Syst[ema] Nat[uræ], p. 391. (This is the page reference in Edition 12, 1766). Shaw's text is very similar to Browne's description and, although the head scales are more visible in Shaw's illustration than in Seba's, the two figures are very similar.

8. In the second edition of his work (para. 4 above), Browne (1789) used several question marks when he employed binominal nomenclature in the index and on figures, and Shaw (1802) gave new names to those of Browne's names with question marks. Browne (1789) gave the name '*Anguis lumbricalis?*' to pl. 44, fig. 1, and listed '*Anguis lumbricoides??*' (sic) in Index 4, p. xlvi, suggesting that his own species *subargentea* could possibly be synonymous with *A. lumbricalis* Linnaeus. In copying Browne's description of the blind snake, Shaw (1802) also incorporated Browne's question mark. Shaw cited Linnaeus (1766) and most of Linnaeus's citations in his work, although he was often inconsistent and inaccurate in his use of references and

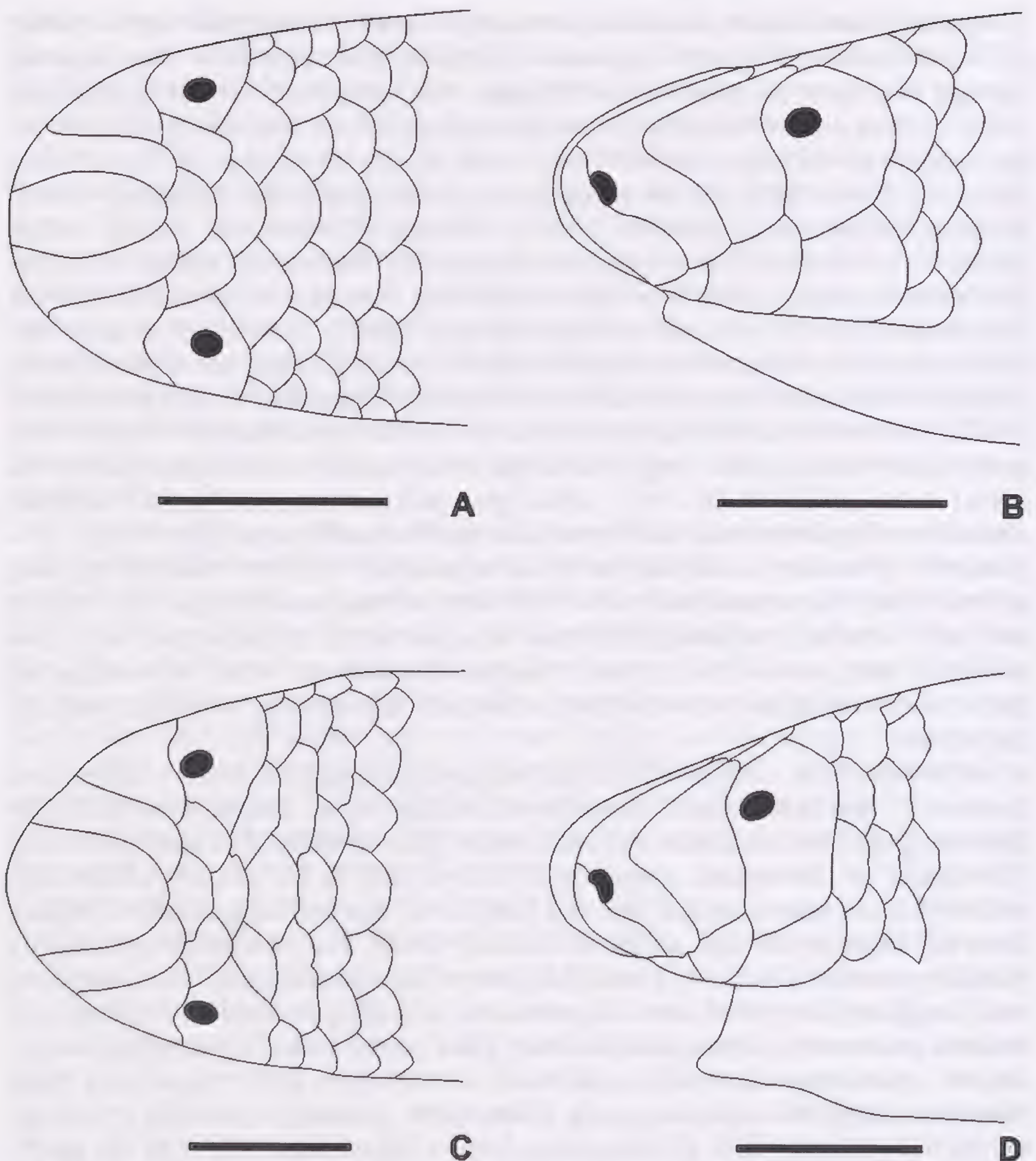


Fig. 1. Dorsal and lateral views of the head scutellation (scale bar = 2 mm) in: **A, B.** *Typhlops lumbricalis* (KU 273756, neotype); **C, D.** *Typhlops jamaicensis* (KU 269908, specimen proposed as neotype).

usually omitted citations of Gronovius that had been included by Linnaeus (Shaw may not have had easy access to a copy of Gronovius's work). Shaw's (1802) new nominal species was based on two of the references cited by Linnaeus (viz. Seba, 1734; Browne, 1756) and the name *jamaicensis* could be considered a replacement name for *lumbricalis*. The name *jamaicensis* is the only one of the 17 replacement names proposed by Shaw (see Smith & David, 1999) still in current use.

9. The herpetological community (for example, Gundlach, 1880; Boulenger, 1893; Barbour, 1901; 1914; Barbour & Ramsden, 1919) accepted the nomenclatural status of *A. jamaicensis* as discussed by Duméril & Bibron (1844, pp. 287–290). They later

summarised the name *lumbricalis* and included two synonyms for it, *subargentea* and *jamaicensis*. They also noted that Shaw's description and illustration were copies of Browne's description and Seba's illustration, respectively. Nevertheless, Cochran (1924) erroneously resurrected *jamaicensis*. She found that populations of the blind snake in Jamaica and Puerto Rico associated with the name *T. lumbricalis* differ in scutellation, pattern, and other characters from *T. lumbricalis* populations of the Bahamas, Cuba, and Hispaniola, meriting distinct species recognition. Cochran stated that Shaw's description was based on the accounts of Browne and Seba, since Shaw himself questioned the reference to *A. lumbricalis*. She added that Linnaeus's name was based on Gronovius's description and, since Gronovius's material had a low middorsal scale count, it was justifiable to apply the name *lumbricalis* only to blind snakes with 20 scale rows anteriorly and low middorsal scale row counts, which encompasses specimens from the Bahamas, Cuba and Hispaniola; thus *Typhlops* populations found in Puerto Rico and Jamaica must be called *T. jamaicensis*. However, in the absence of a lectotype or neotype designated for *lumbricalis* from the Bahamas, Cuba or Hispaniola, this statement was incorrect.

10. The names have been used consistently for two distinct species, *Typhlops lumbricalis* from Cuba, Isla de Juventud, and the Bahamas with 237–329 middorsal scales, and *T. jamaicensis* from Jamaica with 379–448 middorsal scales (see, for example, Thomas, 1976; 1989; Dixon & Hendricks, 1979; Garrido & Jaume, 1984; Schwartz & Henderson, 1988; 1991; Wallach, 1998; Powell et al., 1996; Crombie, 1999; Estrada & Ruibal, 1999; McDiarmid, Campbell & Touré, 1999; Domínguez & Moreno, 2003). Recently *T. lumbricalis* has been redescribed by Domínguez & Díaz (2011) as having 256–271 middorsal scales and being restricted to the Bahamas. A ruling is needed to separate the two names so that they can continue to be used for these two species, maintaining stability in the nomenclature. Currently there is no specimen of *T. jamaicensis* suitable for lectotype designation and we propose that a neotype be designated. This is specimen KU 269908 collected from St. James, 1 mile South of Reading (18°23'32"N, 77°51'35"W, 493 m elevation, datum WGS 84), Jamaica, on 25 July 1961 by Albert Schwartz (AS 15296). It is an adult male, medium sized, 262 mm SVL, 8 mm TL, 8.0 mm MBD. Lacks distinct cervical region. Head is slightly ogival in dorsal view, not dorsoventrally depressed, slightly broader than long, HWM/HL is 1.08; rounded in lateral view; broad rostral in dorsal view, almost broad as long, 0.81 RWD/RLD, curved-sided, slightly umbo, not flared on anterior apex, nearly parallel-sided midrostrally, with rounded posterior apex and not reaching interocular level, postnasal pattern strongly divergent; single subtriangular preocular contacting with third supralabial only, two postoculars, two parietals and four supralabials with T-III imbrication pattern (Figs. 1C, 1D); 22 scale rows anteriorly, without reduction posteriorly, high middorsal scale counts (398), 10 ventrocaudals. Dorsum and venter colorations are dark brown and lighter brown (cream) in alcohol, respectively. Snout and head are pigmented.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the specific name *jamaicensis* Shaw, 1802, as published in the binomen *Anguis jamaicensis*, is to be treated as the specific name of a newly proposed nominal species and not as a replacement name for *Anguis lumbricalis* Linnaeus, 1758;

- (2) to designate specimen KU 269908 at the University of Kansas Natural History Museum & Biodiversity Research Center, Lawrence, KS, U.S.A., as the neotype of *Anguis jamaicensis* Shaw, 1802;
- (3) to place on the Official List of Specific Names in Zoology the name *jamaicensis* Shaw, 1802, as published in the binomen *Anguis jamaicensis* and as defined by the neotype designated in (2) above.

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References

- Barbour, T. 1901. Batrachia and Reptilia from the Bahamas. *Bulletin of the Museum of Comparative Zoology at Harvard College*, **46**(3): 55–61.
- Barbour, T. 1914. A contribution to the zoogeography of the West Indies, with special reference to amphibians and reptiles. *Memoirs of the Museum of Comparative Zoology at Harvard College*, **44**(2): 209–359, 1 plate.
- Barbour, T. & Ramsden, C.T. 1919. The herpetology of Cuba. *Memoirs of the Museum of Comparative Zoology at Harvard College*, **47**(2): 71–213.
- Boulenger, G.A. 1893. *Catalogue of the snakes in the British Museum (Natural History)*, vol. 1. xxviii, 448 pp. Taylor & Francis, London.
- Browne, P. 1756. *The civil and natural history of Jamaica*. viii, 503 pp., 49 pls. Patrick Browne, London.
- Browne, P. 1789. *The civil and natural history of Jamaica*, Ed. 2. viii, 503, [46] pp., 49 pls. Patrick Browne, London.
- Cochran, D.M. 1924. *Typhlops lumbricalis* and related forms. *Journal of the Washington Academy of Sciences*, **14**(8): 174–177.
- Crombie, R.I. 1999. Jamaica. Pp. 63–92 in Crother, B.I. (Ed.), *Caribbean amphibians and reptiles*. Academic Press, London.
- Dixon, J.R., & Hendricks, F.S. 1979. The wormsnakes (family Typhlopidae) of the neotropics, exclusive of the Antilles. *Zoologische Verhandelingen*, **173**: 1–39.
- Domínguez, M. & Díaz, R.E. 2011. Taxonomy of the blind snakes associated with *Typhlops lumbricalis* (Linnaeus, 1758) (Scolophoridae: Typhlopidae) from the Bahama Islands and Cuba. *Herpetologica*, **67**(2): 194–211.
- Domínguez, M. & Moreno, L.V. 2003. Serpientes del suelo. Pp. 98–109, in Rodríguez Schettino, L. (Ed.), *Anfibios y reptiles de Cuba*. UPC Print, Vaasa.
- Duméril, A.M.C. & Bibron, G. 1844. *Erpétologie générale ou histoire naturelle complète des Reptiles. Comprehant l'histoire générale des Ophidiens, la description des genres et des espèces de serpent non venimeux . . .*, vol. 6. xii, 610 pp., 14 pls. Librairie Encyclopédique de Roret, Paris.
- Estrada, A.R. & Ruibal, R. 1999. A review of Cuban herpetology. Pp. 31–62 in Crother, B.I. (Ed.), *Caribbean amphibians and reptiles*. Academic Press, London.
- Garrido, O.H. & Jaume, M.L. 1984. Catálogo descriptivo de los anfibios y reptiles de Cuba. *Doñana, Acta Vertebrata*, **11**(2): 5–128.
- Gronovius, L.T. 1756. *Museum ichthyologicum, sistens piscium indigenorum and quorundam exoticorum, qui in Museo Laurentii Theodori Gronovii adservantur, descriptiones ordine systematico . . .*, vol. 2. x, 88 pp., 7 pls. Theodor Haak, Leiden.

- Gundlach, J. C.** 1880. *Contribución a la erpetología cubana*, 99 pp. Imprenta de G. Montiel y C^a, La Habana.
- Günther, A.** 1859–1870. *Catalogue of fishes in the British Museum*, vol. 1–8. London.
- Linnaeus, C.** 1754. *Hans Maj:ts Adolf Frideriks vår allernådigste konungs naturalie samling innehållande sällsynte och främmande djur, som bevaras på kongl. lust-slottet Ulriksdahl* . . . xxx, 96 pp, [7] pp, 33 pls. Salvii, Holmiae.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 338 pp. Salvii, Holmiae.
- Linnaeus, C.** 1764. *Museum S:æ R:æ M:tis Adolphi Friderici Regis Svecorum, Gothorum, Vandalorumque* . . . , vol. 2. 110 pp, [1] pp. Salvii, Holmiae.
- Linnaeus, C.** 1766. *Systema Naturae*, Ed. 12, vol. 1. 532 pp. Salvii, Holmiae.
- McDiarmid, R.W., Campbell, J.A. & Touré, T.A.** 1999. *Snake species of the world: A taxonomic and geographic reference*, vol. 1. xi, 511 pp. Herpetologists' League, Washington, D. C.
- Oppel, M.** 1811. *Die ordnungen, familien und gattungen der reptilien, als prodrom einer naturgeschichte derselben*. xii, 87 pp. Lindauer, Munich.
- Powell, R., Henderson, R.W., Adler, K., & Dundee, H.A.** 1996. An annotated checklist of West Indian amphibians and reptiles. Pp. 51–93, 8 pls. in Powell, R., & Henderson, R.W. (Eds.), *Contributions to West Indian herpetology: A tribute to Albert Schwartz*. Society for the Study of Amphibians and Reptiles, Ithaca.
- Schwartz, A., & Henderson, R.W.** 1988. West Indian amphibians and reptiles: A checklist. *Milwaukee Public Museum Contributions in Biology and Geology*, **74**: 1–264.
- Schwartz, A., & Henderson, R.W.** 1991. *Amphibians and reptiles of the West Indies. Descriptions, distributions, and natural history*. xvi, 720 pp. University of Florida Press, Gainesville.
- Seba, A.** 1734. *Locupletissimi rerum nturalium Thesauri* . . . , vol. 1. 178 pp., 121 pls. Wetstenium, Gul Smith & Janssonio-Waesbergios, Amsterdam.
- Shaw, G.** 1802. *General zoology, or systematic natural history*, vol. 3 (Amphibia), part 2. vii, 302 pp. Kearsley, London.
- Smith, H.M., & David, P.** 1999. George Shaw and the herpetology volume in his series, general zoology. Pp. 5–96 in Adler, K. (Ed.), *George Shaw's general zoology or systematic natural history. Volume III – Amphibians and reptiles*. Society for the Study of Amphibians and Reptiles, Ithaca.
- Thomas, R.** 1976. *Systematics of the Antillean blind snakes of the genus Typhlops (Serpentes: Typhlopidae)*. Ph. D. Dissertation, Louisiana State University, Louisiana.
- Thomas, R.** 1989. The relationships of Antillean *Typhlops* (Serpentes: Typhlopidae) and the description of three new Hispaniolan species. Pp. 409–432 in Woods, C.A. (Ed.), *Biogeography of the West Indies: Past, present and future*. Sandhill Crane Press, Gainesville.
- Wallach, V.** 1998. *The visceral anatomy of blindsnakes and wormsnakes and its systematic implications (Serpentes: Anomalepididae, Typhlopidae, Leptotyphlopidae)*. Ph.D. Dissertation, Northeastern University of Boston, Massachusetts.
- Wheeler, A.C.** 1958. The Gronovius fish collection: A catalogue and historical account. *Bulletin of the British Museum (Natural History), Historical Series*, **1**(5): 185–249.

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Comment on the proposed conservation of *Haliplanella* Hand, 1956 (Anthozoa, Actinaria) by suppression of *Haliplanella* Treadwell, 1943 (Polychaeta)
(Case 3493; see BZN 66: 312–316; 67: 166–167)

Daphne Gail Fautin

Department of Ecology and Evolutionary Biology, and Natural History Museum and Biodiversity Institute, University of Kansas, Lawrence, Kansas 66045, U.S.A.
(e-mail: fautin@ku.edu)

Marymegan Daly

Department of Evolution, Ecology, and Organismal Biology, The Ohio State University, 1315 Kinnear Road, Columbus, OH 43212, U.S.A.
(e-mail: daly.66@osu.edu)

We respond to den Hartog & Ates (BZN 67: 166–167) who commented on our appeal (BZN 66: 312–316) to resolve a homonymy by suppressing the name *Haliplanella* Treadwell, 1943 (for a polychaete annelid) in favour of the name *Haliplanella* Hand, 1956 (for an actiniarian – a sea anemone). Most of the comments by den Hartog & Ates (BZN 67: 166–167) relate to taxonomy, not nomenclature. We reiterate our conviction that both taxonomy and nomenclature would best be served by the action we request.

We disagree with the assertion that ‘The introduction by Hand (1956) of the genus *Haliplanella* and of the family HALIPLANELLIDAE was exclusively based on the assumed presence of a combination of three types of nematocysts in the acontia’ (den Hartog & Ates, BZN 67: 166). Hand (1956), having observed three types of nematocysts from the acontia, illustrated them – he did not merely assume they were present. In addition, he included in the diagnosis of *Diadumene* the ability to develop catch tentacles (now commonly termed ‘fishing tentacles’), omitting mention of catch tentacles in the diagnosis of *Haliplanella*. Hand (1956) thereby implied that individuals belonging to the genus *Haliplanella* do not form catch tentacles, a distinction he explicitly stated (personal communication to DGF) as part of his conceptualising the genera (although we now know that that feature does not, in fact, differentiate them). The matter raised by den Hartog & Ates (BZN 67: 166) concerning the existence (or not) of a well-marked fosse and parapet was not considered by Hand (1956) and does not bear on this matter.

As is acknowledged by den Hartog & Ates (BZN 67: 166), assignment of the type species of *Haliplanella*, *Sagartia luciae* Verrill, 1898, to the genus *Diadumene* is not original to them (in a manuscript cited as in press). Indeed, we stated in our appeal (66: 313) that the animal that ‘is the most widespread species of anemone in the world’ has been ‘variously known as *Haliplanella luciae*, *H. lineata*, *Diadumene luciae* or *D. lineata*.’ An extensive list of the names used for this species, which is available online from Fautin (2009), includes several uses of the name *Haliplanella* during the past 2–3 years. This belies the assertion by den Hartog & Ates (BZN 67: 166) that ‘The recent proposal to conserve the name *Haliplanella* by Fautin et al. [BZN 66: 312–316] will serve no purpose.’ In fact, people continue to use the name, so resolving the homonymy would benefit the community.

As we pointed out (Fautin et al. BZN **66**: 314), because the name *Haliplanella* Treadwell, 1943 is no longer used for the annelid, suppressing it will not cause hardship to any biologist. In addition to resolving a homonymy that exists irrespective of taxonomic considerations, placing on the Official List of Generic Names in Zoology the name *Haliplanella* Hand, 1956 will be a positive step; it will not put the name *Tricnidactis errans* de Oliveira Pires, 1987 in a nomenclaturally ambiguous situation pending taxonomic resolution of its affinities. That sea anemone was placed by its describer in the family HALIPLANELLIDAE. Although den Hartog & Ates, (BZN **67**: 167) ‘think *T. errans* belongs to another family,’ they ‘have not been able to study this species.’ In discussing it, they raise taxonomic issues not directly germane to the nomenclatural basis of our appeal, including the philosophical position that ‘Species descriptions should not be based on a single isolated character’ (BZN **67**: 167).

Additional reference

Fautin, D.G. 2009. Hexacorallians of the World. <http://geoportal.kgs.ku.edu/hexacoral/anemone2/index.cfm> (Accessed 22 July 2011)

Comment on the proposed conservation of usage of *Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE) by designation of a neotype
(Case 3532; BZN **68**: 41–46)

Riccardo Giannuzzi Savelli

Via Mater Dolorosa, 54, 90146 Palermo, Italy (e-mail: malakos@tin.it)

Francesco Pusateri

Via Castellana, 64, 90135 Palermo, Italy (e-mail: francesco@pusateri.it)

We strongly support the application of Cecalupo and Robba and we fully agree with their well presented considerations.

Comment on the proposed conservation of *Termes serratus* Froggatt, 1898 and *Termes serrula* Desneux, 1904 (Insecta, Isoptera, TERMITINAE)
(Case 3385: see BZN **64**: 83–86, 185–187; **65**: 47–49, 132–136; **66**: 342–348)

Yoko Takematsu

Faculty of Agriculture, Yamaguchi University, 1677–1 Yoshida, Yamaguchi 753–8515, Japan (e-mail: takematu@yamaguchi-u.ac.jp)

I’ve read Jones’s proposal and all the subsequent comments. I realise the decision of Roisin & Pasteels (2000) was strictly correct. However as a taxonomic researcher of termites in Southeast Asia, I wish to conserve the scientific name *Microcerotermes serratus* (Froggatt) as an Australian species and *Microcerotermes serrula* (Desneux)

as a Southeast Asian species. From my fieldwork I know that *M. serrula* (Desneux) is common and widespread across Sundaland. Also, the soldiers have very distinctive characters and are easily identified using the standard texts (Thapa, 1981 and Tho, 1992). As a consequence, I have seen many series of this species labeled as *M. serrula* in termite collections in museums, government forestry departments and universities in Malaysia, and the same is probably true of Indonesian institutions in Kalimantan, Sumatra and Java. It is clear that many people including non-termitologist researchers and government officers have used the name *M. serrula* (Desneux) for the Southeast Asian species. Evans (BZN 66: 343) was correct when he mentioned that this name had been used not only in scientific publications but also in multiple government reports about forestry and biodiversity. If the name is not conserved, then to avoid confusion a large number of specimens deposited in various institutions would have to be re-labeled as *M. serratus*, or people who access these specimens would have to be aware of the name change. I therefore support the views of Jones (BZN 64: 83–86) and Evans (BZN 66: 342–346).

Comments on the proposed establishment of availability of *Balintus* d'Abrera, 2001, *Gulliveria* d'Abrera & Bálint, 2001, *Salazaria* d'Abrera & Bálint, 2001, *Megathecla* Robbins, 2002 and *Gullicaena* Bálint, 2002 (Insecta, Lepidoptera, LYCAENIDAE) (Case 3458; see BZN 65: 188–193, 66: 271–272, 66: 349–351)

(1) Zsolt Bálint

Hungarian Natural History Museum, Baross utca 13, Budapest VIII, H-1088, Hungary (e-mail: balint@nhmus.hu)

Bernard d'Abrera

137 Ridge Road, Mount Dandenong, Victoria, 3767, Australia (e-mail: bfly@clara.co.uk)

1. We are convinced that our original descriptions of taxa described in d'Abrera (2001) have been misinterpreted by the applicants in Case 3458. All the eight generic names we proposed, but which were questioned by the applicants, have been correctly established in a proper and scientific manner, and thus they have incontrovertibly become available for zoological nomenclature. Our wording closely adheres to the Articles of the Code.

2. The descriptions of all the genera proposed by us in d'Abrera (2001) appeared under appropriate headings, each having the newly proposed generic names in bold capital letters with bold typeface and indicated as 'gen. nov.'. The first entry after each heading clearly established the particular 'Type Species' for the proposed genus, stating (as required by the Code) the name of the selected taxon in its original combination. The next paragraph in logical sequence listed those morphological characters that we have used to diagnose the proposed genus through its selected type species.

3. Contrary to the claim of the applicants, this action is not ambiguous. In providing a description of the characters existing on the type species as the standard representative of the proposed genus, we are strictly following the requirements of

the Code. We have already pre-indicated in the heading in bold capital letters the putative taxon to be diagnosed. Thus it is a clear statement that the subject is the genus novum and not the type species.

4. The final entry in the text, with the unambiguous subheading ‘Congeners’ further places all the taxa we considered to be encompassed by the new genus in their new combinations with the bold typeface indicating ‘comb. nov.’, which means that this is a new combination of specific and generic epithets, the species being well established, but the genus now being established as a nomenclatural novelty in combination with it.

5. Although we think it is unnecessary to have to explain our precise wording, we now do this to balance the inaccurate explanations of the applicants who have brought Case 3458 for their own purposes. We use the most discussed genus *Annamaria* as an example.

6. Article 13.1.1 states that a name is available when it is accompanied by a description or definition that states in words characters that are purported to differentiate the taxon. The heading of our nomenclatural (proposing a new name) and taxonomic (to describe and to define a new taxon) action clearly states the sole subject of the paragraph: that is ‘GENUS *ANNAMARIA* d’Abrera & Balint **gen. nov.**’ the name and the taxon, which is to be established and differentiated in the subsequent entry. It is accompanied by a description stating in words the use of certain characters of the type species, which is the objective standard of the genus. Therefore there is (a) a new genus-group name proposed, (b) a description which states in words that these are characters of the type species (the objective standard of the genus), which define the taxon (the new genus) and (c) help to differentiate the taxon from the previously described ones.

7. The applicants have artificially constructed a situation in which the proposed name *Annamaria* is a nomen nudum, because (they imply) there is no description or definition of the name itself, thereby rendering it unavailable for any nomenclatural action. If the sole subject of our taxonomic and nomenclatural action was to be simply the type species *in vacuo*, then the heading ‘GENUS *ANNAMARIA* d’Abrera & Balint **gen. nov.**’ would be nonsense. Hence, to render the name unavailable the applicants coined the phrase ‘implied grammatical subject’ for our sentences, which they chose to interpret accordingly. This distorted an otherwise straightforward nomenclatural and taxonomic action and obscured what we originally presented, which was a correct, comprehensive but economic taxonomic description of the genus *Annamaria* **gen. nov.**

8. By using such a distortion it becomes only too easy to question not only the availability of the names we proposed, but many previously established names by other authors. For instance, the genera *Famegana* Eliot, 1973, *Rysops* Eliot, 1973, *Titea* Eliot, 1973, and *Zintha* Eliot, 1973, taken from one of the most fundamental works ever published on LYCAENIDAE classification (Eliot, 1973), would also be rendered unavailable as well. The descriptions of the mentioned names established by Eliot were worded in an almost identical manner to the questioned generic names published in d’Abrera (2001); but interestingly none of these names have been considered to be unavailable by the applicants (Lamas, 2008a).

9. We maintain that our ‘interpretation’ is sound and in logical union with the heading, the meaning and the intention of the text. It is only ambiguous in the eyes

of the composers of the case; there are no semantic grounds to justify their 'implied grammatical subject'. The meaning of d'Abrera & Bálint is given expressly in the heading: 'In NEOTROPICAL VII:1107 [GENUS *ANNAMARIA* d'Abrera & Bálint **gen. nov.** was] treated as *Evenus draudti* [with congeners]. Likewise by other workers. However [GENUS *ANNAMARIA* d'Abrera & Bálint **gen. nov.**] is distinguished from *Evenus* by shorter cell of f.w. (1/3rd of costal length), and extension of Vein 1 of h.w. into a lobed tail at tornus. [GENUS *ANNAMARIA* d'Abrera & Bálint **gen. nov.** has a] compound androconial patch on male f.w. consisting of single circle within cell & quadrifurcate patch immediately outside discocellulars. Further, [GENUS *ANNAMARIA* d'Abrera & Bálint **gen. nov.** has] androconial patches on post discal & submarginal tornal areas of f.w. respectively.'

10. In the Code there is nothing to indicate that the characters of the selected type species could be regarded as anything but characteristic of the genus which it was deliberately chosen to represent. Nor does the Code indicate that describing other characters only present in the congeners would somehow be necessary to make the proposed name available from a nomenclatural point of view. Moreover, we make an historical note that our concept of *Annamaria* (in d'Abrera, 2001; Bálint, 2005) was still partly divergent from that of Robbins' *Lamasina* (Robbins, 2004b), but later the applicants came to similar conclusions (Robbins & Lamas, 2008). This objectively demonstrates that the original definition of the genus *Annamaria* was sound in spite of the criticism of the applicants.

11. Therefore we maintain that the establishment of all of our new genera could not have been composed in a more straightforward way and that we did this in accordance with the Code. Interested readers can check all of our claims in the pages of the *Concise Atlas of the Butterflies of the World* (d'Abrera, 2001; there is a generic index), or consult the Fig. 3. of Bálint (2005), which is a facsimile of the original description of the genus *Annamaria* d'Abrera & Bálint, 2001 and compare our style and wording with those of Eliot (1973) and judge for themselves whether there are objective grounds or genuine need by the applicants for bringing such a case in the first place.

12. Expressing the need to correct some nomenclature for a yet-to-be-published manuscript, one of the applicants (Robbins, 2002) preferred the forgotten, homonymous and therefore unavailable name *Eucharia* Boisduval, 1870, which was briefly and inadequately described. Moreover, the type species for that genus was only subsequently designated through a corrective nomenclatural procedure. The name *Annamaria* was published with a designation of a type species and clearly listed generic characters, and is therefore preferable. Hence, *Annamaria* should at least have been cited objectively by the applicants: consequently it must be applied. In contrast, for the unavailable name *Eucharia*, one of the applicants proposed *Lamasina*, although he had clearly demonstrated that he was well aware of the existence of the name *Annamaria*, a senior synonym (Robbins, 2002). This applicant failed to use the name in such manner, instead considering it subjectively unavailable (Robbins, 2004; Robbins & Lamas, 2008; see Bálint, 2009, 2010).

13. The same applicant correctly replaced the junior homonym *Gulliveria* d'Abrera & Bálint, 2001 with *Megathecla* Robbins, 2002 but that applicant made no attempt to contact either of us to inform us that the homonym *Gulliveria* was in need of replacement, as recommended by the Code of Ethics. The other names in the case

were not considered to be unavailable at that time, but this concept has since been reversed in the eumaeine checklist compiled by one of the applicants (Robbins, 2004b) for a book edited by the other applicant (Lamas, 2004). This was finally crystallised in Case 3458 and subsequent joint papers of the applicants (see Bálint, 2009).

14. The applicant working on a checklist of neotropical butterflies did contact one of us (Dr Bálint) in early 2002 when the nomenclatural note written by his colleague (the other applicant) had most probably already been printed, or was in the last stages of preparation for press. It was only at that late moment that the applicant first drew the attention of Bálint to *Gulliveria* being homonymous, but did not mention that his colleague's paper (Robbins, 2002) had already been submitted. This again appears counter to the ethical recommendations in the Code. Meanwhile, Bálint's (2002) paper with the replacement name *Gullicaena* Bálint was written, submitted, accepted and published on November 30 2002, with no knowledge of the other submission on the subject. Therefore the publication date of *Megathecla* Robbins (26 June 2002) indeed preceded that of the replacement name *Gullicaena* Bálint, 2002 by five months, though we maintain this was not executed in a manner concordant with the ethical recommendations of the Code.

15. We feel this lack of communication was indicative of an uncooperative attitude among workers on Neotropical eumaine lycaenids, expressed in a paper authored by one of the applicants (Robbins, 2004a) and published in a book edited by the other applicant (Lamas, 2004). In the application to the Commission, the taxonomic descriptions in d'Abrera's (2001) book (which was the first modern taxonomic overview of Neotropical eumaeines) are, in our opinion, misinterpreted and the availability of new names is incorrectly questioned.

16. One applicant recently published a paper in which he proposed twelve species-group replacement names in the family LYCAENIDAE as part of his work on butterfly nomenclature on a global scale (Lamas, 2008b). Appropriately, most of his new names honour the authors of the junior homonyms or the collector, or refer to the geographic localities of the taxa. However, two homonyms, namely *Plebejus* (*Plebejides*) *pylaon forsteri* Bálint, 1990, and *Albulina tibetana* d'Abrera, 1993, received the replacement names that cause us to question if this was an inappropriate test of the boundaries of point 4 of the Code of Ethics ('no author shall propose a name . . .that would be likely to give offence on any grounds'). The name proposed to replace *forsteri* is *tumultus* (confusion), while the name proposed to replace *tibetana* is *chaos* (disorder). We respectfully suggest that it was only through publishing Case 3458 that the authors have created tumult and confusion for these names themselves. We also underscore that, had the authors adhered to point 3 of the Code of Ethics, we, as authors of these names, would have been happy to establish appropriate substitute names.

17. If this application were to be upheld, the Commission would permit a destabilising situation in which any nomenclaturist or taxonomist might feel justified in attempting to dismiss other publications with no objective justification, and would undermine the need to apply to the plenary powers of the Commission to suppress many names. Any paragraph with economic wording purporting to describe taxa would be at risk. The sense or meaning of a taxon would be at the mercy of manipulative grammatical or syntactic interpretation, determined by the agenda of

the revisor, who could apply his subjective interpretation of the ‘purpose’ of any original text.

18. We have concerns that one of the authors of this Case is also in a position to vote on its outcome. We request that the Commission consider the ethical justification if this vote is a deciding factor in the outcome of the Case.

19. In short, Case 3458, if upheld by the Commission, would create tumult and chaos and undermine the main brief of the Code, which is the stability of scientific nomenclature.

Additional references

- Bálint, Zs.** 2009. Five chapters on *Annamaria columbia* with the description of a new genus (Lepidoptera: Lycaenidae: Eumaeini). *Boletín Científico Centro de Museos, Museo Historia Natural, Caldas*, **13**: 75–82.
- Bálint, Zs.** 2010. Microscopic observations and notes on wing scaling in *Annamaria* d’Abrera & Bálint, and further notes on the genus (Lepidoptera: Lycaenidae: Theclinae). *Lepidoptera Novae*, **3**: 29–40.
- Eliot, J.N.** 1973. The higher classification of the Lycaenidae (Lepidoptera): a tentative arrangement. *Bulletin of the British Museum (Natural History) (Entomology)*, **28**(6): 371–505.
- Lamas, G.** 2008a. Genera and genus-group names of the butterflies of the world (revised 4 Feb 2008) – 4,739 names. <http://www.ucl.ac.uk/taxome/gbn/> (accessed: 23.VII.2011).
- Lamas, G.** 2008b. Twelve new species-group replacement names and further nomenclatural notes on Lycaenidae (Lepidoptera). *Zootaxa*, 1848: 47–56.
- Robbins, R.K.** 2004a. Introduction to the Checklist of Eumaeini (Lycaenidae), pp. xxiv–xxx in Lamas, G. (Ed.), Checklist: Part 4A. Hesperioidea – Papilionoidea. In Heppner, J.B. (Ed.), *Atlas of Neotropical Lepidoptera*, vol. 5A. 439 pp. Association for Tropical Lepidoptera; Scientific Publishers, Gainesville, Florida.
- Robbins, R.K.** 2004b. Lycaenidae. Theclinae. Tribe Eumaeini, pp. 118–137 in Lamas, G. (Ed.), Checklist: Part 4A. Hesperioidea – Papilionoidea. In Heppner, J.B. (Ed.), *Atlas of Neotropical Lepidoptera*, vol. 5A. 439 pp. Association for Tropical Lepidoptera; Scientific Publishers, Gainesville, Florida.

(2) Brian J. Craig

4 Clayhill Crescent, London SE9 4JB, U.K. (e-mail: brian.amoria@googlemail.com)

This proposal should be rejected for the following reasons:

Any description of a new genus which contains the words ‘is differentiated by’ or an equivalent phrase, followed by a series of anatomical characters must be construed as purporting to differentiate the genus. Article 13.1.1 of the Code only requires that an author states characters that are purported to differentiate the taxon, not that the characters are diagnostic, nor that the differentiation is perfect, as long as the statement is purported to do so. It is not for Robbins or Lamas to decide what d’Abrera & Bálint (in d’Abrera, 2001) purported, any more than it is appropriate for others to draw conclusions about Robbins & Lamas’s motives in lodging this application. It is common sense to assume that d’Abrera & Bálint purported to do what they were required to do, i.e. differentiate their new genera.

Although the wording of the description of *Annamaria* (and the implication of its one missing word) has often been quoted as an example in this debate, the other seven new genera proposed by d’Abrera & Bálint (in d’Abrera, 2001) were each introduced

using slightly different wording. For this reason these names can not be rejected in bulk, as requested in this application. Each one should be examined on its own merits and ruled on individually.

Robbins & Lamas (BZN 66: 349–351) have repeatedly claimed that this action is being taken only in the interests of stability and universality, which d'Abrera & Bálint (in d'Abrera, 2001) apparently 'breached' in some way by describing eight new genera, that nobody has yet questioned with regard to the soundness of the concepts involved. There was no instability or confusion in 2001 when these were described. All the problems that have ensued were initiated by Robbins (2002) when he unilaterally declared the name *Annamaria* unavailable. The only confusion now is whether this genus should be known by its senior name of *Annamaria* d'Abrera & Bálint (in d'Abrera, 2001) or by its later subjective synonym *Lamasina* Robbins, 2002.

For reasons that the applicants have never fully explained, the Commission is being asked to make five (supposedly unavailable) names available, two of which are to be immediately suppressed and thus made unavailable, along with six others, five of which have barely been discussed in the application and appear to represent taxa for which there would then be no alternative generic names. The two names proposed by Robbins (2002) are conspicuous among the four survivors of this nomenclatural massacre. The rejection of this proposal would confirm that all eight generic names are available from their original descriptions.

**Comment on the proposed designation of a neotype for the nominal species
Chionobas chryxus Doubleday, 1849 (currently *Oeneis chryxus*; Insecta,
Lepidoptera, NYMPHALIDAE)**
(Case 3495; see BZN 67: 121–128; 68: 136–140)

James A. Scott

60 Estes Street, Lakewood, Colorado 80226–1254 U.S.A.

(e-mail: JameScott@juno.com)

There is clear evidence that there are two separate species throughout the Rocky Mountains. I personally collected *altacordillera* in Alberta at Nigel Pass and Highwood Pass. Charles Harp and Steve Kohler collected numerous *altacordillera* in Montana, the former's specimens now in the University of Colorado museum. Specimens in that museum show both species fly together in the Wind River Mts. of Wyoming. Paul M. Thompson and David Threatful collected *altacordillera* at Gott Peak in British Columbia, and Norbert Kondla found it on Mt. Spieker. In NE Nevada *altacordillera* occurs in the Snake Range, while the other species has been found in the Egan Range. The two species are sympatric at 20 known locations throughout the Rocky Mountains. And I recently (Scott, 2008) found that larvae of *altacordillera* (including two subspecies from Washington and Ontario) have a different coloration and usually have a dashed heart-band on larvae, compared to the species depicted in the original *chryxus* painting which has a solid heart-band. No known butterfly has subspecies with oviposition behaviour as different as these two *Oeneis* taxa have. The problem here is that it takes time for people to learn how to

identify new similar taxa, and not all lepidopterists have acquired those skills. Difficulty of identification is nothing new: four species of *Phyciodes* (NYMPHALIDAE) and seven of *Celastrina* (LYCAENIDAE) are now known in eastern United States, up from two and one a few decades ago, and most lepidopterists still cannot identify those. Females are not as good as males for identification in *Oeneis chryxus*-group species: *O. nevadensis* and *O. macouni* females are almost identical while the males are very different, and *O. alberta* females often resemble *O. 'chryxus'* females.

The ICZN governs nomenclature, not taxa, so squabbling about limits of taxa is largely irrelevant. It is enough to state that the people who have carefully studied these taxa think there are several taxa in Alberta, and a neotype is needed because the lectotype has dubious taxon identity and disputable locality.

I had thought that the proposed *chryxus* neotype would be acceptable to other lepidopterists, as it comes from the Alberta location that people generally cite as the type locality, and it matches the phenotype of the original painting. Surely it is preferable to stabilise nomenclature before a large body of literature using confused names accumulates, rather than after. However, from a biological viewpoint, the optimal neotype should come from an area where the biology of both species has been well studied (Colorado), and the biology of these butterflies is little known in Alberta. I was informed that the Commission can render an Opinion on this case in multiple ways, so to satisfy the doubters and permit an optimal neotype, the best way would be for the Commission not to designate a neotype, and either merely affirm that the wording of Articles 72.4.1 and 72.4.1.1 of the Code is not a mistake, or make no decision at all on the case. As written, Article 72.4.1.1 is numbered and indented as subservient to 72.4.1; therefore 72.4.1.1 allows one to consider specimens not mentioned in the original publication as part of the type series, only if those specimens belong to the taxon defined by the original publication. This interpretation prevents the worst calamity that can befall a lectotype (a lectotype that proves to belong to a taxon different from that defined in the original publication), therefore the writing in the 4th edition of the Code is a considerable improvement over the 3rd edition. When this case was reviewed prior to publication, two Commissioners agreed with this restrictive interpretation of Articles 72.4.1 and 72.4.1.1, which with Article 86.3 invalidates the lectotype, and wrote that I could just designate a neotype without petitioning the Commission. So the absence of an Opinion on this case would satisfy doubters and would permit an optimal neotype, although a statement that the wording is not a mistake would contribute to John Calhoun's request for clarification of this Article.

Even if the original male *chryxus* were found, it would be considered merely a useless paralectotype by anyone who thinks the lectotype is valid. Also, Article 73.1 clearly confirms that the male illustrated in the original publication is the holotype, and Article 73.1.2 states that evidence outside the work may be taken into account to help identify that specimen – any other conspecific specimens found would be paratypes, not syntypes.

Additional reference

Scott, J.A. 2008. Early stages of *Oeneis calais altacordillera* Scott (plate V). Pp. 25–29, pl. 5 and pl. 5 continued, in Scott, J. & Fisher, M.S. Geographic variation and new taxa of western North American butterflies, especially from Colorado. *Papilio* (New Series), 18:1–72.

Comments on *Stegosaurus* Marsh, 1877 (Dinosauria, Ornithischia): proposed replacement of the type species with *Stegosaurus stenops* Marsh, 1887 (Case 3536; see BZN 68: 127–133)

(1) Susannah C. R. Maidment

Department of Palaeontology, The Natural History Museum, Cromwell Road, London, SW7 5BD, U.K. (e-mail: s.maidment@nhm.ac.uk)

In Case 3536, Galton outlined the taxonomic history of the iconic dinosaur genus *Stegosaurus*. In this Case, Galton asked the Commission to designate *Stegosaurus stenops* as type species of the genus *Stegosaurus*, thereby allowing the holotype specimen of *Stegosaurus stenops*, USNM 4934, to become the representative of the genus *Stegosaurus*.

The Case is complicated by the fact that those who have worked on the taxonomy of *Stegosaurus* do not agree about the taxonomic validity of various genera and species, as clearly outlined by Galton. In Case 3536 Galton suggested that the type specimen of *Stegosaurus armatus* (YPM 1850), which is the type species of *Stegosaurus*, bears no synapomorphies of *Stegosaurus* or autapomorphies of its own, making the name *Stegosaurus armatus* a nomen dubium. However, Mossbrucker et al. (2009) have suggested that YPM 1850 may bear an autapomorphy, making the name *Stegosaurus armatus* valid.

If YPM 1850 is undiagnostic, the generic name *Stegosaurus* is a nomen dubium. If YPM 1850 is diagnostic, as has been tentatively suggested by Mossbrucker et al. (2009), the name *Stegosaurus armatus* would likely be restricted to YPM 1850 because, as argued by Galton in the Case, YPM 1850 bears no other synapomorphies of *Stegosaurus* (in its current usage); thus all other material currently referred to the genus *Stegosaurus* would need a new generic name. *Hypsirhophus discursus* was named by Cope (1878) for a partial dorsal vertebra (AMNH 5731). Galton (2010) considered this specimen to be diagnostic and *Hypsirhophus* a distinct genus although for Maidment et al. (2008) and Maidment (2010) *Hypsirhophus* is the next available nominal genus to contain all other species of stegosaur formerly included in *Stegosaurus*.

Stegosaurus is one of the most iconic and most recognisable dinosaurs to both the public and scientists alike; the loss of the name *Stegosaurus* is therefore an unfavourable outcome.

Maidment et al. (2008) suggested that all stegosaur material from the Morrison Formation of the USA belonged to a single species (except for material described as *Hesperosaurus mjosi* by Carpenter et al. [2001]). Maidment et al. (2008) named this species *Stegosaurus armatus*, but diagnostic characters were based on a referred specimen, USNM 4934, the holotype of *Stegosaurus stenops*, which Maidment et al. (2008) considered to be a junior synonym of *Stegosaurus armatus*. Designating *Stegosaurus stenops* as the type species of *Stegosaurus* results in USNM 4934 being the specimen on which *Stegosaurus* is based. This is entirely appropriate because USNM 4934 is one of the most complete stegosaurs known from anywhere in the world, and the specimen has been used as the reference specimen against which other stegosaurs are compared since a detailed and definitive description of it was

published (Gilmore, 1914). This is entirely in keeping with the work of Maidment et al. (2008), because USNM 4934 was used as the reference specimen in that work.

As Galton has argued in the Case, it is more favourable to designate *Stegosaurus stenops* as the type species of *Stegosaurus* than to make USNM 4934 the type specimen of *Stegosaurus armatus*, because of the questions surrounding the presence or absence of diagnostic characters in the holotype of *Stegosaurus armatus*. By designating a new type species for *Stegosaurus*, problems of taxonomy relating to YPM 1850 are circumvented. I therefore fully support the proposal by Galton in Case 3536.

(2) Kenneth Carpenter

Prehistoric Museum, 155 East Main Street, Price, UT 84501, U.S.A.

(e-mail: Ken.Carpenter@usu.edu)

The taxon *Stegosaurus armatus* was established by O.C. Marsh in 1877 on a very fragmentary specimen from the Morrison Formation near Morrison, Colorado (erroneously stated to be 'Morrison, Wyoming' by Galton, BZN 68: 127). The specimen was encased in silicified sandstone and collected very poorly by modern standards using hammers and chisels, plus explosives to reduce the rock into more manageable pieces. The result is that much of the specimen was greatly damaged and many pieces missing, thus making it only marginally diagnostic (Carpenter & Galton, 2001), as noted by Galton (BZN 68: 130) in his petition. Such situations are unfortunately common for dinosaur specimens named during the 1800s that now require petitions to the Commission to ensure their stability (e.g. Case 3037, Charig & Chapman, 1998; Case 3506, Paul & Carpenter, 2010). In these examples, specimens displayed characters once thought to be unique but which were later found to be more widely distributed through the discovery of more complete specimens. Wilson & Upchurch (2003) refer to this as 'historical obsolescence'. *Stegosaurus armatus* certainly falls into this category in that the hexangular caudal vertebrae and large, plate-like osteoderms were thought unique among the Dinosauria. However, subsequent discoveries in Africa, Asia, Europe, and North America have shown that these characters occur in other taxa referred to the Stegosauria. As noted by Galton (BZN 68: 131), the type of *S. armatus* has no autapomorphic characters, therefore it cannot be separated from any other taxon of Stegosauria.

In contrast to *S. armatus*, the nominal species *Stegosaurus stenops* Marsh, 1887 is represented by several nearly complete skeletons and thus is very well known. These specimens form the basis for the current concept of the genus *Stegosaurus* (Marsh, 1887, 1891; Gilmore, 1914; Carpenter & Galton, 2001; Carpenter et al., 2001; Galton & Upchurch, 2004; Maidment et al., 2008; Carpenter, 2010; Galton, 2010). Because *Stegosaurus* is such an iconic dinosaur, and because the name is so well entrenched in the scientific literature, its name should be associated with material of taxonomic utility. That such is not currently the case is shown by Maidment et al. (2008) declaring *Hypsirophus discursus*, *Stegosaurus unguatus*, *S. duplex*, *Diracodon laticeps*, and *Stegosaurus stenops* to be junior synonyms of *S. armatus*. However, the result is the creation of a 'superspecies' showing a wider range of non-ontogenetic variation throughout the skeleton than any other species of Dinosauria, except waste-basket

taxa (e.g., *Iguanodon* prior to Paul, 2008). As Carpenter (2010) has noted, the range of variation in *S. armatus* (sensu Maidment et al., 2008) cannot be replicated in other large samples of stegosaurids (e.g. *Kentrosaurus aethiopicus* from Africa), therefore casting doubt on the validity of the variations, which in turn casts doubt on the concept of *S. armatus* as defined by Maidment et al. (2008). All of this confusion would be eliminated by replacing the nominal species *S. armatus* with *S. stenops* as petitioned by Galton (BZN 68: 127–133), thereby ensuring taxonomic stability for the well-known genus *Stegosaurus*.

Additional references

- Charig, A.J. & Chapman, S.D. 1998. Case 3037. *Iguanodon* Mantel, 1825 (Reptilia, Ornithischia): proposed designation of *Iguanodon bernissartensis* Boulenger in Beneden, 1881 as the type species, and proposed designation of a lectotype. *Bulletin of Zoological Nomenclature*, 55(2): 99–104.
- Paul, G.S. 2008. A revised taxonomy of the iguanodont dinosaur genera and species. *Cretaceous Research*, 29, 192–216.
- Paul, G.S. & Carpenter, K. 2010. Case 3506. *Allosaurus* Marsh, 1877 (Dinosauria, Theropoda): proposed conservation of usage by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877. *Bulletin of Zoological Nomenclature*, 67(1): 1–4.
- Wilson, J.A. & Upchurch, P. 2003. A revision of *Titanosaurus* Lydekker (Dinosauria – Sauropoda), the first dinosaur genus with a ‘Gondwanan’ distribution. *Journal of Systematic Palaeontology*, 1: 125–160.

(3) Vahe Demirjian

11 Canyon Terrace, Newport Coast, CA 92657 U.S.A.

(e-mail: vahedemirjian@cox.net)

I am writing in support of the petition (Case 3536) by Galton to replace *Stegosaurus armatus* Marsh, 1877 with *S. stenops* Marsh, 1887 as the type species of *Stegosaurus* Marsh, 1877.

Maidment et al. (2008) diagnosed *Stegosaurus* on the basis of the following autapomorphies: (1) Quadrate-squamosal-paroccipital process articulation overhangs the retroarticular process of the lower jaw; (2) postzygapophyses on posterior cervical vertebrae are elongated posteriorly and overhang the back of the centrum; (3) transverse processes on anterior caudal vertebrae (except for caudals one and two) project ventrally rather than laterally; (4) large, rectangular acromial process of the scapula; (5) supra-acetabular process diverges at an angle of 90 degrees from the anterior process of the ilium; and (6) medial process present on the posterior iliac process of the ilium. They also noted that *Stegosaurus armatus* (= *Stegosaurus* sensu Carpenter et al. 2001 of my usage) differs from all other stegosaurs in having: (1) edentulous portion of the dentary anterior to the tooth row and posterior to the prementary; (2) dorsally elevated postzygapophyses of the cervical vertebrae; (3) bifurcated summits of the neural spines of the anterior and middle caudal vertebrae; (4) unexpanded posterior end of the pubis; and (5) dermal ossicles embedded in the skin on the underside of the cervical region. They referred all stegosaur taxa from the Morrison Formation (except *Stegosaurus sulcatus*, *S. longispinus*, and *Hesperosaurus mjosi*) to *S. armatus*.

Of the autapomorphies cited for STEGOSAURINAE (= *Stegosaurus*) and *Stegosaurus* (= *S. armatus*) by Maidment et al., only two characters can be observed in the holotype of *Stegosaurus armatus* (YPM 1850): transverse processes on anterior caudal vertebrae (except for caudals one and two) project ventrally rather than laterally and bifurcated summits of the neural spines of the anterior and middle caudal vertebrae. As acknowledged by Galton (2010), the presence of transverse processes on anterior caudal vertebrae (except for caudals one and two) that project ventrally rather than laterally is not confined to YPM 1850 and other specimens referred to *S. armatus* by Maidment et al. (e.g. USNM 4934, YPM 1853) but is also found in *Hesperosaurus mjosi* and *Stegosaurus longispinus*. The caudals of YPM 1850 exhibit bifurcated summits of the neural spines of the anterior and middle caudal vertebrae (Carpenter & Galton, 2001, fig. 4.4G; Galton, 2010, fig. 1b), an autapomorphy of *Stegosaurus armatus* according to Maidment et al., but as Galton demonstrated, this character is also present in *Stegosaurus unguatus* (YPM 1853, YPM 1858), *S. stenops* (USNM 4934, DMNS 2818), *S. longispinus* (UW 20503), and the holotype of *Hypsirophus discursus* (AMNH 5731). Using the updated list of synapomorphies for Stegosauria, and STEGOSAURIDAE provided by Mateus et al. (2009, supplementary information), a stegosaurian placement of *S. armatus* is supported by the presence of two parasagittal rows of plates or spines extending from the cervical region to the end of the tail (Carpenter & Galton, 2001, fig. 4.5C). YPM 1850 can be assigned to STEGOSAURIDAE based on the presence of a dorsal process on transverse process of caudal vertebrae and anterior caudal vertebrae with bulbous swellings at the top of neural spines (Carpenter & Galton, 2001, figs 4.4D, F).

Using the criteria outlined by Galton regarding the autapomorphic structure of dermal armor for Morrison stegosaur species, *Stegosaurus unguatus*, *S. stenops*, *S. longispinus*, and *Hesperosaurus mjosi* differ from each other in the form of the dermal armor, as well as characters of the femur and ilium, as noted by Galton. However, except for fragments of a large dermal plate, no dermal armor is preserved in the holotype of *S. armatus*, so YPM 1850 lacks any dermal characters that would distinguish it from *S. unguatus*, *S. stenops*, *S. longispinus*, or *Hesperosaurus mjosi*.

In a recent abstract, Mossbrucker et al. (2009) indicated that the holotype of *Stegosaurus armatus* is distinguishable from other Morrison stegosaurs by the presence of unusually robust neural spines, based on recent preparation of the holotype at the Morrison Natural History Museum (MNHM). However, this character is likely to be a product of individual variation within a species, and the results of Mossbrucker et al. have not yet been published. Thus, STEGOSAURINAE (= *Stegosaurus* sensu Maidment et al., 2008) comprises three valid genera, *Hesperosaurus*, *Stegosaurus*, and *Wuerhosaurus*; *Stegosaurus* sensu Carpenter et al., 2001 (= *Stegosaurus armatus* sensu Maidment et al., 2008) comprises three valid species (*Stegosaurus unguatus*, *S. stenops*, and *S. longispinus*), with *Stegosaurus armatus*, *Hypsirophus discursus*, *Diracodon laticeps*, and *Stegosaurus sulcatus* referable to *Stegosaurus* sensu stricto (restricted to *S. stenops*, *S. longispinus*, and *S. unguatus*) as nomina dubia. I provisionally agree with Galton in considering *S. armatus* a nomen dubium and restricting it to YPM 1850 until the results of Mossbrucker et al. are published and YPM 1850 is fully described.

Additional references

Mateus, O., Maidment S.C.R. & Christiansen, N.A. 2009. A new long-necked ‘sauropod-mimic’ stegosaur and the evolution of the plated dinosaurs. *Proceedings of the Royal Society B: Biological Sciences*, **276**: 1815–1821.

Preprints of selected comments:

To speed dissemination and facilitate discussion, preprints of selected comments will be available online at <http://iczn.org/preprints>. Please check this page regularly for new additions.

OPINION 2277 (Case 3504)***Onthophagus rugulosus* Harold, 1886 (Coleoptera, SCARABAEIDAE):
specific name conserved**

Abstract. The Commission has conserved the specific name of the dung beetle *Onthophagus rugulosus* Harold, 1886 (Coleoptera: SCARABAEIDAE), a widespread species from East Asia, by suppressing the senior secondary homonym *Elytridium rugulosum* Heer, 1870, a fragmentary fossil from the Miocene of Spitsbergen, Norway, that was transferred to *Onthophagus* in 1977. A replacement name, *O. spitsbergeniensis* nom. nov., has been provided for the dubious fossil species.

Keywords. Nomenclature; Coleoptera; SCARABAEIDAE; *Onthophagus*; *Elytridium*; *Onthophagus rugulosus*; *Onthophagus spitsbergeniensis*; dung beetles; Miocene; East Asia; Spitsbergen.

Ruling

- (1) Under the plenary power it is hereby ruled that the specific name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum*, and all uses of the name before Harold (1886) are suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *rugulosus* Harold, 1886, as published in the binomen *Onthophagus rugulosus*;
 - (b) *spitsbergeniensis* Krell, 2010, as published in the binomen *Onthophagus spitsbergeniensis*, replacement name for *Elytridium rugulosum* Heer, 1870.
- (3) The name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum* and as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3504

An application to conserve the specific name of the dung beetle *Onthophagus rugulosus* Harold, 1886 (Coleoptera: SCARABAEIDAE), a widespread species from East Asia, by suppressing the senior secondary homonym *Elytridium rugulosum* Heer, 1870, based on a fragmentary fossil from the Miocene of Spitsbergen, Norway, that was transferred to *Onthophagus* in 1977, was received from Frank-Thorsten Krell (*Denver Museum of Nature & Science, Denver, CO, U.S.A.*) on 17 September 2009. After correspondence the case was published in BZN 67: 28–31 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 29. At the close of the voting period on 1 June 2011 the votes were as follows:

Affirmative votes – 25: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Alonso-Zarazaga, Lim and Pyle were on leave of absence.

Voting FOR, Grygier said he would have liked to know whether the holotype of *Onthophagus spitsbergeniensis* is extant and, if so, where and with what catalogue information, even though this is not required information for a replacement name. Ng said that the replacement name had already been proposed and was nomenclaturally valid as the BZN is a valid publication. Winston, voting FOR, commented that basing a Recent species on a fossil type usually turns out to be a mistake. Zhou, voting FOR, noted that the replacement name would be invalid if the case was not supported by the Commission.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

rugulosum, *Elytridium*, Heer, 1870, *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, **8**(7): 78.

rugulosus, *Onthophagus*, Harold, 1886, in Heyden, L. von, Harold, [E.] von & Kraatz, G. 1886. *Deutsche Entomologische Zeitschrift*, **30**: 289.

spitsbergeniensis, *Onthophagus*, Krell, 2010, *Bulletin of Zoological Nomenclature*, **67**: 29.

OPINION 2278 (Case 3489)***Chrysomela elongata* Suffrian, 1851 (currently *Oreina elongata*; Insecta, Coleoptera): name conserved**

Abstract. The Commission has conserved the use of the well known alpine leaf beetle name *Oreina elongata* (Suffrian, 1851), originally published as *Chrysomela elongata*, and thus a junior primary homonym of *Chrysomela elongata* Linnaeus, 1758, currently known as *Tillus elongatus* (Linnaeus, 1758).

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; CHRYSOMELIDAE; *Oreina elongata*; alpine leaf beetle.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *elongata* Suffrian, 1851, as published in the binomen *Chrysomela elongata*, is not invalid by reason of being a junior primary homonym of *elongata* Linnaeus, 1758, as published in the binomen *Chrysomela elongata*.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *elongata* Linnaeus, 1758, as published in the binomen *Chrysomela elongata*;
 - (b) *elongata* Suffrian, 1851, as published in the binomen *Chrysomela elongata*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *elongata* Linnaeus, 1758, as published in the binomen *Chrysomela elongata*, as ruled in (1) above.

History of Case 3489

An application to conserve the use of the well known alpine leaf beetle name *Oreina elongata* (Suffrian, 1851), originally published as *Chrysomela elongata*, and thus a junior primary homonym of *Chrysomela elongata* Linnaeus, 1758, currently known as *Tillus elongatus* (Linnaeus, 1758), was received from Hans Silfverberg (*Finnish Museum of Natural History, Zoological Museum, Helsinki University, Helsinki, Finland*) on 3 March 2009. After correspondence the case was published in BZN 66: 320–322 (December 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 321. At the close of the voting period on 1 March 2011 the votes were as follows:

Affirmative votes – 22: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, and Zhou.

Negative votes – 2: Lamas and Lim.

Alonso-Zarazaga, Ng, Pyle and Zhang were on leave of absence.

Voting FOR, Harvey commented that, although he felt the case was relatively straightforward and he supported the application to maintain existing usage of the junior homonym, he advised that details of any existing type specimens of both *Chrysomela elongata* Linnaeus, 1758 and *Chrysomela elongata* Suffrian, 1851 should be supplied to verify current taxonomic placements.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

elongata, *Chrysomela*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 377.

elongata, *Chrysomela*, Suffrian, 1851, *Linnaea Entomologica*, **5**: 146.

OPINION 2279 (Case 3488)***Papilio danae* Fabricius, 1775 (currently *Colotis danae*; Insecta, Lepidoptera, PIERIDAE): usage conserved by the suppression of *Papilio danae* Hufnagel, 1766**

Abstract. The combination *Papilio danae* Fabricius, 1775 (Lepidoptera, PIERIDAE) has been conserved by suppression of the primary homonym *Papilio danae* Hufnagel, 1766. The current combination *Colotis danae* is well-established as the valid name for a common and widespread butterfly with many subspecies in Africa, Arabia, and Asia.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; PIERIDAE; *Papilio*; *Colotis*; *Colotis danae*; *Papilio eborea*; butterflies; Asia; Arabia; Africa.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *danae* Hufnagel, 1766, as published in the binomen *Papilio danae*, is suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy.
- (2) The name *danae* Fabricius, 1775, as published in the binomen *Papilio danae*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The name *danae* Hufnagel, 1766, as published in the binomen *Papilio danae*, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3488

An application to conserve the combination *Papilio danae* Fabricius, 1775 (Lepidoptera, PIERIDAE) by suppression of the primary homonym *Papilio danae* Hufnagel, 1766 was received from Torben B. Larsen (Denmark), R.I. Vane-Wright (Natural History Museum, London, U.K. and Durrell Institute of Conservation and Ecology, University of Kent, Canterbury U.K.), Krushnamegh Kunte (Harvard University, Cambridge, MA, U.S.A.) and Vazrick Nazari (University of Guelph, ON, Canada) on 17 February 2009. After correspondence the case was published in BZN 66: 250–255 (September 2009). The title, abstract and keywords of the case were published on the Commission's website. A comment in support was published in BZN 67: 65.

Decision of the Commission

On 1 September 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 253. At the close of the voting period on 1 December 2010 the votes were as follows:

Affirmative votes – 24: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Lim.

Alonso-Zarazaga, Ng and Pyle were on leave of absence.

Voting FOR, Halliday said the Case presented an overwhelming argument for the protection of the name *danae* Fabricius, 1775. The use of the name *Papilio eborea* was a clear example of the over-zealous and pedantic application of the letter of the Code, in a way that was inconsistent with stability. However, he felt it was unfortunate that the Case depended heavily on the use of Google as evidence of usage. He said he thought the Commission should make an explicit statement that they strongly discourage the use of Google because it produces spurious and misleading results. This point was made very eloquently in a Comment entitled ‘*Googleology*’: *Powerful tool or unreliable evidence* by Lawrence, Pelkey & Soares (BZN 67: 246–254). In the future authors should be instructed not to use Google, but instead to base their arguments on a more thoughtful and critical analysis of the genuine scientific literature. Štys said that although he was voting FOR, he regretted that the published Case had not used the terminology of the Code. The authors’ ‘replacement name *Papilio eborea*’ (paragraph 10) is actually a ‘substitute name’ (cf. Glossary of the Code). Moreover, Štys also felt that the number of hits in Google should not be used in nomenclatural argumentation (paragraphs 9 & 10). For example, the authors of the Case gave 3,700 hits for *Colotis danae* while only 12 for “*Hipparchia danae* Hufnagel and *Papilio danae* Hufnagel” (as from 30 September 2009); whereas Štys’ subsequent search (25 September 2010) provided 19,700 for “*Colotis danae*”, 64,300 for “*Hipparchia danae*” and 3,020 for “*Papilio danae*” using the names without authors, 4,630 for “*Colotis danae* Fabricius”, 5,380 for “*Colotis danae* Hufnagel”, 1,290 for “*Hipparchia danae* Fabricius”, 998 for “*Hipparchia danae* Hufnagel”, 2,620 for “*Papilio danae* Fabricius” and 1,800 for “*Papilio danae* Hufnagel”. Štys said the utility and reliability of such data needed no further comment. Voting FOR, Yanega felt it should not, in principle, have been necessary to vote on this Case. He suggested that Article 29.3.5 is sufficient to indicate that the two names are not homonyms. However, the inappropriate actions of Koçak would seem to make a Commission ruling desirable to prevent further confusion.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

danae, *Papilio*, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. [xxxii], Officina Libraria Kortii, Flensburgi & Lipsiae, p. 476.

danae, *Papilio*, Hufnagel, 1766, *Berlinisches Magazin, oder gesammlete Schriften und Nachrichten für die Liebhaber der Arzneywissenschaft, Naturgeschichte und der angenehmen Wissenschaften überhaupt*, 2(1): 82.

OPINION 2280 (Case 3436)***Pachynematus* Konow, 1890 (Insecta, Hymenoptera, Symphyta):
generic name given precedence over *Epitactus* Förster, 1854**

Abstract. The Commission has conserved the widely used sawfly generic name *Pachynematus* Konow, 1890 by giving it precedence over a rarely used name *Epitactus* Förster, 1854, whenever the two are considered to be synonyms. Sawflies in this genus are of economic significance as pests of cereal and grass-fodder crops in North America, Europe and China.

Keywords. Nomenclature; taxonomy; Hymenoptera; TENTHREDINIDAE; NEMATINAE; *Pachynematus*; *Epitactus*; *Nematus trisignatus*; *Epitactus praecox*; sawflies; Holarctic.

Ruling

- (1) Under the plenary power the name *Pachynematus* Konow, 1890 is hereby given precedence over the name *Epitactus* Förster, 1854 whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Pachynematus* Konow, 1890 (gender: masculine), type species by subsequent designation by Schmidt et al. (1998) *Nematus trisignatus* Förster, 1854, with the endorsement that it is to be given precedence over *Epitactus* Förster, 1854 whenever the two are considered to be synonyms;
 - (b) *Epitactus* Förster, 1854 (gender: masculine), type species by monotypy *Epitactus praecox* Förster, 1854, with the endorsement that it is not to be given priority over *Pachynematus* Konow, 1890, whenever the two are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *trisignatus* Förster, 1854, as published in the binomen *Nematus trisignatus* (specific name of the type species of *Pachynematus* Konow, 1890);
 - (b) *praecox* Förster, 1854, as published in the binomen *Epitactus praecox* (specific name of the type species of *Epitactus* Förster, 1854).

History of Case 3436

An application to conserve the widely used sawfly generic name *Pachynematus* Konow, 1890 by giving it precedence over the rarely used senior subjective synonym *Epitactus* Förster, 1854, whenever the two are considered to be synonyms, was received from Andrew D. Liston (*Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany*) on 6 August 2007. After correspondence the case was published in BZN 67: 32–37 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 35. At the close of the voting period on 1 June 2011 the votes were as follows:

Affirmative votes – 19: Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Minelli, Ng, Papp, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 6: Bogutskaya, Bouchet, Kottelat, Kullander, Pape and van Tol. Alonso-Zarazaga, Lim and Pyle were on leave of absence.

Voting AGAINST, Bouchet commented that conditional reversals of precedence are a source of nomenclatural instability. Although he sympathised with the intention of the author, he could not technically endorse the solution that was offered to solve the case.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Pachynematus Konow, 1890, *Deutsche Entomologische Zeitschrift*, **1890**(2): 233 & 238.

Epitactus Förster, 1854 *Verhandlungen der naturhistorischen Vereines der preussischen Rheinlande und Westfalens (N.F.)*, **1**: 435.

tresignatus, *Nematus*, Förster, 1854, *Verhandlungen der naturhistorischen Vereines der preussischen Rheinlande und Westfalens (N.F.)*, **1**: 292.

praecox, *Epitactus*, Förster, 1854, *Verhandlungen der naturhistorischen Vereines der preussischen Rheinlande und Westfalens (N.F.)*, **1**: 435.

OPINION 2281 (Case 3507)***Phylloporina* Ulrich in Foerste, 1887 (Bryozoa, Fenestrata, Phylloporinina): *Retepora trentonensis* Nicholson, 1875 designated as the type species**

Abstract. The Commission has set aside *Retepora angulata* Hall, 1852 and *Retepora angulata* Hall as applied by Foerste, 1887 as type species of the Palaeozoic bryozoan genus *Phylloporina* Ulrich in Foerste, 1887 and replaced them with *Retepora trentonensis* Nicholson, 1875.

Keywords. Nomenclature; taxonomy; Bryozoa; Phylloporinina; PHYLLOPORINIDAE; *Phylloporina*; *Chasmatopora*; *Retepora angulata*; *Retepora trentonensis*; bryozoans; Palaeozoic.

Ruling

- (1) Under the plenary power all previous type species fixations for the nominal genus *Phylloporina* Ulrich in Foerste, 1887 are hereby set aside and *Retepora trentonensis* Nicholson, 1875 is hereby designated as the type species.
- (2) The name *Phylloporina* Ulrich in Foerste, 1887 (gender: feminine), type species *Retepora trentonensis* Nicholson, 1875 by designation in (1) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *trentonensis* Nicholson, 1875, as published in the binomen *Retepora trentonensis* (specific name of the type species of *Phylloporina* Ulrich in Foerste, 1887, as ruled in (1) above) is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3507

An application to set aside *Retepora angulata* Hall, 1852 and *Retepora angulata* Hall as applied by Foerste, 1887 as type species of the Palaeozoic bryozoan genus *Phylloporina* Ulrich in Foerste, 1887 and replace them with *Retepora trentonensis* Nicholson, 1875, was received from Frank K. McKinney (*Appalachian State University, Boone, NC, U.S.A.*) and Patrick N. Wyse Jackson (*Trinity College, Dublin, Ireland*) on 18 November 2009. After correspondence the case was published in BZN 67: 38–43 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 41. At the close of the voting period on 1 June 2011 the votes were as follows:

Affirmative votes – 23: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 2: Kojima and Ng.

Alonso-Zarazaga, Lim and Pyle were on leave of absence.

Voting FOR, Štys said he wondered why the more straightforward solution was not suggested that would affect only the date and not the type species. *Phylloporina* Ulrich in Foerste, 1887, type species *Retepora angulata* Foerste, 1887 non Hall, 1852 (misidentified, later renamed *Chasmatopora foerstei* McKinney & Wyse Jackson, 2010; fixed by monotypy) was a senior homonym of *Phylloporina* Ulrich, 1890 (type species *Retepora trentonensis* Nicholson, 1875; subsequently designated by Ulrich, 1895). The senior homonym (a junior subjective synonym of *Chasmatopora* Eichwald, 1855) could simply have been suppressed in favour of the junior name. However, Winston, also voting FOR, said she thought the present solution was the simplest way to clarify a confused nomenclatural problem.

Voting AGAINST, Kojima said that for the stability of the generic name *Phylloporina*, he did not find it necessary to set aside all previous type species fixations for the nominal genus *Phylloporina* and to designate *Retepora trentonensis* as the type species. Ng, also voting AGAINST, said he was not convinced that a ruling needed to be made, even though the authors made an excellent case for how complicated the taxonomy of the two genera involved was and how doubtful the true identities of the type species. These animals were of minimal scientific impact and were currently the subject of study only by taxonomists. He felt that it might be best just to accept that the type species was *Retepora angulata* Hall, 1852 and move the taxonomy on from there. It mattered not what the original intent was or whose concept it was, as long as there was now a one-off resolution and the science could progress from that point. Ng granted that there would be a short period of confusion but he felt that taxonomists could surely cope.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Phylloporina Ulrich in Foerste, 1887, *Bulletin of the Scientific Laboratories of Denison University*, **2**: 150.
trentonensis, *Retepora*, Nicholson, 1875, *Geological Magazine, New Series, Decade 2*, **2**: 37.

OPINION 2282 (Case 3502)***Coluber nummifer* Reuss, 1834 (currently *Hemorrhois nummifer*; Reptilia, Serpentes): specific name conserved**

Abstract. The Commission has conserved the widely used specific name *nummifer* Reuss, 1834 for an eastern Mediterranean colubrine snake originally published within *Coluber* Linnaeus, 1758 and currently referred to the genus *Hemorrhois* Boie, 1826, by suppressing the putative senior synonym *Coluber tyria* Linnaeus, 1758.

Keywords. Nomenclature; taxonomy; Reptilia; COLUBRIDAE; *Coluber*; *Coluber tyria*; *Hemorrhois nummifer*; coin snake; diadem snake; eastern Mediterranean; Saharo-Sindian.

Ruling

- (1) Under the plenary power the specific name *tyria* Linnaeus, 1758, as published in the binomen *Coluber tyria*, is hereby suppressed for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy.
- (2) The name *nummifer* Reuss, 1834, as published in the binomen *Coluber nummifer*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The name *tyria* Linnaeus, 1758, as published in the binomen *Coluber tyria* and as suppressed in (1) above is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3502

An application to conserve the widely used specific name *nummifer* Reuss, 1834 for an eastern Mediterranean colubrine snake originally published within *Coluber* Linnaeus, 1758 and currently referred to the genus *Hemorrhois* Boie, 1826, by suppressing the putative senior synonym *Coluber tyria* Linnaeus, 1758, was received from Beat Schätti (*San Pedro Pochutla, Oaxaca, Mexico*) and Frank Tillack (*Berlin, Germany*) on 2 September 2009. After correspondence the case was published in BZN 67: 44–52 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 47. At the close of the voting period on 1 June 2011 the votes were as follows:

Affirmative votes – 21: Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Bogutskaya, Ng and van Tol.

Kottelat abstained. Alonso-Zarazaga, Lim and Pyle were on leave of absence.

Voting AGAINST, Ng said that while he was very sympathetic to the case and the arguments, he did not believe the solution suggested here was the best way forward

for long-term stability. He felt that the fact that the name had been used probably incorrectly in some cases did not change the rules involved. Considering that the species of snake in question had not been widely used in other domains of biology, and was primarily used in ecology, faunistics and systematics, an eventual change in name, perhaps to *Coluber tyria* Linnaeus, 1758 with an appropriate neotype selection, should not cause substantial problems. Voting AGAINST, van Tol said that this case should have been resolved by designating a neotype for *Coluber tyria*.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

nummifer, *Coluber*, Reuss, 1834, *Museum Senckenbergianum*, 1(6): 135.

tyria, *Coluber*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1. Salvii, Holmiae, p. 224.

OPINION 2283 (Case 3390)***Archaeopteryx lithographica* von Meyer, 1861 (Aves): conservation of usage by designation of a neotype**

Abstract. The Commission has set aside all previous type fixations for the nominal species *Archaeopteryx lithographica* von Meyer, 1861 and designated a feathered specimen (BMNH 37001) in the Natural History Museum, London as the neotype. The holotype (a feather impression) was not identifiable to species and could belong to any taxon of fossil birds recognised from the Solnhofen limestone.

Keywords. Nomenclature; taxonomy; Aves; *Archaeopteryx*; *Archaeopteryx lithographica*; neotype; Solnhofen; Jurassic.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for the nominal species *Archaeopteryx lithographica* von Meyer, 1861 are set aside and specimen BMNH 37001 at the Natural History Museum, London is designated as the neotype.
- (2) It is hereby ruled that both the generic and specific names *Archaeopteryx* and *lithographica* were made available by von Meyer, 1861 in ‘*Archaeopterix lithographica* (Vogel-Feder) und *Pterodactylus* von Solenhofen. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefakten-Kunde*, p. 679.’
- (3) The entries in the Official List of Generic Names in Zoology and the Official List of Specific Names in Zoology for the names *Archaeopteryx* von Meyer, 1861 and *lithographica* von Meyer, 1861, as published in the binomen *Archaeopteryx lithographica*, are hereby emended to record the neotype designation as in (1) above and the date and pagination as in (2) above.

History of Case 3390

An application to preserve stability and universality of usage of the name *Archaeopteryx lithographica* von Meyer, 1861 by setting aside the existing holotype and designating a neotype, was received from Walter J. Bock (*Columbia University, New York, NY, U.S.A.*) and Paul Bühler (deceased, formerly of *University of Stuttgart-Hohenheim, Stuttgart, Germany*) on 5 June 2006. After correspondence the case was published in BZN 64: 182–184 (December 2007). The title, abstract and keywords of the case were published on the Commission’s website. Comments (seven supporting, one opposing) were published in BZN 64: 261–262, 65: 314–317 (with additional proposals), 66: 87–88, 66: 357–358; 67: 90–93, 67: 179. An additional comment correcting the page reference for the name was received and circulated before the vote; this will be available on the Commission website.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the original set of proposals published in BZN 64: 184 and the modified set of proposals

in BZN **65**: 317 (which included the original two proposals as 1 & 3 and the addition of proposal 2 as reflected in the ruling above). At the close of the voting period on 1 June 2011 the votes were as follows:

Original proposals:

Affirmative votes – 14: Ballerio, Bouchet, Brothers, Grygier, Harvey, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, Winston, Yanega and Zhang.

Negative votes – 8: Halliday, Kojima, Minelli, Ng, Papp, Patterson, van Tol and Zhou.

Bogutskaya split her vote, Fautin abstained. Alonso-Zarazaga, Kottelat, Lim and Pyle were on leave of absence.

Modified proposals:

Affirmative votes – 20: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Ng, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, and Zhou.

Negative votes – 2: Kojima and Pape,

Grygier split his vote, Fautin abstained. Alonso-Zarazaga, Kottelat, Lim and Pyle were on leave of absence.

As the modified proposals have passed, and include all of the content of the original proposals, this decision is taken as binding for both sets of proposals.

Voting FOR both sets of proposals, Brothers said that it seemed eminently sensible to ensure clarity in the application of this famous name, which was not possible from the current holotype, and designation of the requested neotype would accomplish this. The elimination of ambiguities in its attribution was also assisted by confirmation as to the publication in which the names were made available. Also voting FOR both sets of proposals, Lamas commented that, based on the evidence available, the proposals initially suggested by Bock & Bühler, ably improved by Kadolsky, appeared to him to be the simplest and most rational solution. Voting FOR both sets of proposals Rosenberg said that some of the published comments on this case suggested hypothetical scenarios. One scenario was that detailed anatomical and morphometric study would show all of the feather-bearing nominal species known from Solnhofen are synonymous, in which case a neotype would not be necessary (i.e. given time, the case would resolve itself). Another is that future discoveries would show unequivocally that more than one feather-bearing species occurred at Solnhofen (i.e. sooner or later a neotype would be needed). He pointed out that while these scenarios were both reasonable, the Commission must deal with the current situation, not hypothetical ones. If only one nominal species had so far been described from Solnhofen, Rosenberg said he would agree that designation of a neotype was premature, but the current situation was that some workers considered there to be only one feather-bearing species at Solnhofen whereas others regard there to be more than one. As an example of the latter he cited Senter & Robins (2003, *Journal of Vertebrate Paleontology*, **23**: 961–965), who did a morphometric analysis on six *Archaeopteryx* skeletons, but a priori excluded the specimen assigned to *Wellnhoferia* ‘due to the specimen’s unique pedal and caudal characteristics’. Therefore, Rosenberg regarded designation of a neotype as necessary. Štys, who voted FOR both sets of proposals, said that it was unclear how to vote against the first set of proposals since the first set of proposals was actually only a subset of the second. He suggested a better formulation would have been to vote on whether (b)



Fig. 1. *Archaeopteryx lithographica* (neotype BMNH 37001, the Natural History Museum, London). ©The Natural History Museum, London image 001233. Length of tibiae (for scale) 80.7 mm.

should be included or not. On the content of the Case, he said he thought that the whole specimen was better as the name-bearing type than a non-identifiable feather, particularly since no change of name and no alteration of taxonomic concept was involved. Winston, voting FOR both sets of proposals, said that the modified set

seemed necessary as a comment on the details of the process by which the name became available. Yanega, voting FOR both sets of proposals, said it was quite clear to him that the London specimen had long been taken, in practice, as the de facto type of *A. lithographica*. He thought it seemed perfectly sensible to formalise this unambiguously, as well as to resolve any ambiguities regarding the publication that made the name available, to forestall any future controversy.

Grygier, voting FOR the first set of proposals and splitting his vote for the second set of proposals as FOR 1, AGAINST 2 & 3, explained that statement 1 is identical in both sets of proposals, and that he felt there seemed to be no need for Kadolsky's additional proposal 2 in the modified set as *Archaeopteryx* and *lithographica* are already available from the specified von Meyer work of 1861 by virtue of their being listed as such in the respective Official Lists (Article 80.4 of the Code). The plenary power would be needed to change this status, not to maintain it.

Ng, voting AGAINST the first set and FOR the second set of proposals, commented that the Case explained the controversial history for an extremely important fossil and a very widely used name. He felt that it made sense that the Commission should now fix the author (as it had always been recognised) and select a neotype that had been the basis of what the name was. He added that he felt it might not be the best approach in a legal framework, but it was the right thing to do for nomenclatural stability nevertheless.

Van Tol, voting AGAINST the original set of proposals and FOR the modified set of proposals, said that incomplete type specimens did not usually hamper progress in taxonomy. In most groups consensus was reached on the identity of the nominal taxa based on the opinion of experts after studying type material or descriptions. Apparently, students of fossil birds preferred a better preserved specimen for the nominal taxon *Archaeopteryx lithographica*, while the proposed neotype had been considered the type for many years. Although strictly there was no reason for action by the Commission, the modified proposal actually preserved present practice.

Voting AGAINST both sets of proposals, Kojima commented that the proposal did not mention explicitly why the stability or universality of *Archaeopteryx lithographica* were threatened. Even if the existing name-bearing type (feather impression) could not determine the taxonomic identity of *Archaeopteryx lithographica*, as mentioned in paragraph 8, neither its stability nor universality were threatened.

Original reference

The following is the original reference to the name amended on Official Lists by the ruling given in the present Opinion:

lithographica, *Archaeopteryx*, von Meyer, 1861, *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefakten-Kunde*, **1861**(6): 679.

OPINION 2284 (Case 3499)***Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832 (Aves): usage conserved by suppression of the generic name *Creadion* Vieillot, 1816**

Abstract. The Commission has conserved the generic names *Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832 for Australian wattled honeyeaters (MELIPHAGIDAE) and the New Zealand saddleback (CALLAEIDAE) by suppression of the generic name *Creadion* Vieillot, 1816.

Keywords. Nomenclature; taxonomy; CALLAEIDAE; MELIPHAGIDAE; *Creadion*; *Anthochaera*; *Philesturnus*; saddleback; wattled honeyeaters; Australasia.

Ruling

- (1) Under the plenary power it is hereby ruled that the generic name *Creadion* Vieillot, 1816 is suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Anthochaera* Vigors & Horsfield, 1827 (gender: feminine), type species by subsequent designation by G.R. Gray (1840) *Corvus paradoxus* Daudin, 1800;
 - (b) *Philesturnus* Geoffroy Saint-Hilaire, 1832 (gender: masculine), type species by monotypy *Sturnus carunculatus* Gmelin, 1789.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *paradoxus* Daudin, 1800, as published in the binomen *Corvus paradoxus* (specific name of the type species of *Anthochaera* Vigors & Horsfield, 1827);
 - (b) *carunculatus* Gmelin, 1789, as published in the binomen *Sturnus carunculatus* (specific name of the type species of *Philesturnus* Geoffroy Saint-Hilaire, 1832).
- (4) The name *Creadion* Vieillot, 1816, as suppressed in (1) above is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3499

An application to conserve the generic names *Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832 for Australian wattled honeyeaters (MELIPHAGIDAE) and the New Zealand saddleback (CALLAEIDAE) by suppression of the generic name *Creadion* Vieillot, 1816, was received from Walter J. Bock (*Columbia University, New York, NY, U.S.A.*), Richard Schodde (*Australian Biological Resources Study, Canberra, Australia*) and Ricardo L. Palma (*Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand*) on 24 July 2009. After correspondence the case was published in BZN 66: 332–339 (December 2009). The

title, abstract and keywords of the case were published on the Commission's website. Comments on this case were published in BZN 67: 93–94 and 179–181.

Decision of the Commission

On 1 March 2011 the members of the Commission were invited to vote on the proposals published in BZN 66: 336. At the close of the voting period on 1 June 2011 the votes were as follows:

Affirmative votes – 24: Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Bogutskaya.

Alonso-Zarazaga, Lim and Pyle were on leave of absence.

Voting FOR, Bouchet commented that, although it had no effect on the action taken or his vote, he wished to record his full agreement with Bock et al. (contra Gregory & David) regarding the type species fixation for *Creadion*.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Anthochaera Vigors & Horsfield, 1827, *Transactions of the Linnean Society of London*, **15**: 320. *carunculatus*, *Sturnus*, Gmelin, 1789, *Systema Naturae*, Lipsiae, Ed. 13, vol. 1, pt. 2, p. 805.

Creadion Vieillot, 1816, *Analyse d'une nouvelle ornithologie élémentaire*. Déterville, Paris, p. 34. *paradoxus*, *Corvus*, Daudin, 1800, *Traité élémentaire et complet d'ornithologie, ou histoire naturelle des oiseaux*, vol. 2. 473 pp., pls. 9–27. Bertrandet, Paris, p. 246, pl. 16.

Philesturnus Geoffroy Saint-Hilaire, 1832, *Nouvelles Annales du Muséum d'Histoire Naturelle*, **1**: 390.

OPINION 2285 (Case 3474)***Aplonis* Gould, 1836 (Aves; STURNIDAE): spelling conserved**

Abstract. The Commission has ruled to conserve the widely accepted spelling *Aplonis* Gould, 18 October 1836 for the Indo-Australasian glossy starlings (STURNIDAE) by suppression of the prior but little-used spelling *Aplornis* Gould, [1 or 3 October] 1836.

Keywords. Nomenclature; taxonomy; Aves; STURNIDAE; *Aplonis*; *Aplornis*; *Aplonis marginata*; glossy starlings; Indo-Australasia.

Ruling

- (1) Under the plenary power it is ruled that the generic name *Aplornis* Gould, [1 or 3 October] 1836 is hereby suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *Aplonis* Gould, 18 October 1836 (gender: feminine), type species by subsequent designation *Aplonis marginata* Gould, 1836, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *marginata* Gould, 1836, as published in the binomen *Aplonis marginata* (specific name of the type species of *Aplonis* Gould, 1836), is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Aplornis* Gould, [1 or 3 October] 1836, as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3474

An application to conserve the widely accepted spelling *Aplonis* Gould, 18 October 1836 for the Indo-Australasian glossy starlings (STURNIDAE) by suppression of the prior but little-used spelling *Aplornis* Gould, [1 or 3 October] 1836 was received from Richard Schodde (*Australian Biological Resources Study, Canberra City, Australia*) and Walter J. Bock (*Columbia University, New York, NY, U.S.A.*) on 6 August 2008. After correspondence the case was published in BZN 66: 56–63 (March 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 2 March 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 59. At the close of the voting period on 1 June 2010 the votes were as follows:

Affirmative votes – 25: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Ng, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 1: Pape.

Pyle and Zhang were on leave of absence.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Aplonis Gould, 18 October 1836, *Proceedings of the Zoological Society of London*, **1836**: 73.

Aplornis Gould, [1 or 3 October] 1836, *The Analyst*, **17**: 152.

marginata, *Aplonis*, Gould, 1836, *Proceedings of the Zoological Society of London*, **1836**: 73.

Information and Instructions for Authors

The following notes are primarily for those preparing applications; other authors should comply with the relevant sections. Applications should be prepared in the format of recent parts of the *Bulletin*; manuscripts not prepared in accordance with these guidelines may be returned. For more detailed instructions see <http://iczn.org/content/instructions-authors>.

General. Applications are requests to the Commission to set aside or modify the Code's provisions as they relate to a particular name or group of names when this appears to be in the interest of stability of nomenclature. Authors submitting cases should regard themselves as acting on behalf of the zoological community and the Commission will treat applications on this basis. Applicants should discuss their cases with other workers in the same field before submitting applications, so that they are aware of any wider implications and the likely reactions of other zoologists.

Text. Formatted with double spacing, this should consist of numbered paragraphs setting out the details of the case and leading to a final paragraph of formal proposals. Text references should give dates and page numbers in parentheses, e.g. 'Daudin (1800, p. 49) described . . .'. If the plenary power of the Commission is sought, this necessity should be clearly explained (with reference to the relevant Article of the Code).

References. These should give all authors of a publication. Where possible, ten or more reasonably recent references should be given illustrating the usage of names that are to be conserved or given precedence over older names. The title of periodicals should be in full and in italics; number of volumes, parts, etc. should be in Arabic figures, separated by a colon from the page numbers. Book titles should be in italics and followed by the number of pages and plates, the publisher and place of publication.

Submission of application: Applications should be submitted electronically preferably by email (within the message or as an attachment) to 'iczn@nhm.ac.uk'. When submitted by post, one copy should be sent to: The Executive Secretary, International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. The typescript should be accompanied by a disk with copy in IBM PC compatible format (disks and attachments to be in Word, rtf or ASCII text). It would also be helpful if applications were accompanied by photocopies of relevant pages of the main references where this is possible.

The Commission's Secretariat is very willing to advise on all aspects of the formulation of an application.

Illustrations

If a neotype designation is requested it is strongly advisable to submit an appropriate illustration in TIFF format of sufficiently high resolution for printing. Hardcopy figures will be accepted, at discretion of the Editor. It is desirable to illustrate both specimen and its label, with a scale bar. Furthermore, we are willing to consider illustrations of the organisms under discussion contributed simply to add visual interest to the applications. Line drawings should be high-resolution TIFFs at 600–1200 dpi; photographs may be 300–400 dpi. If the files are difficult to send electronically, LZW compression of TIFF files allows recovery of original file quality. Please note that JPG format often introduces artefacts in printing, thus we are not able to accept JPGs.

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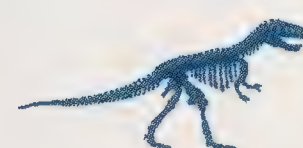
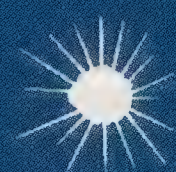
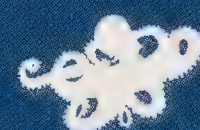


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THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

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The Executive Secretary

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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Cover image: *Gryllotalpa gryllotalpa* (Linnaeus, 1758), the European mole cricket (Latin: *gryllus* – cricket, *talpa* – mole, from its fossorial limbs, fine hairs and subterranean habit). Widespread in the Western Palaearctic region and introduced into parts of the U.S.A. this insect can be an agricultural pest in significant numbers, although in the U.K. it is extremely rare and subject to a U.K. Biodiversity Action Plan (report sightings to g.beccaloni@nhm.ac.uk). Detail from plate 456 of *British Entomology: Original Drawings*, vol. 10, by John Curtis (1862) (© Natural History Museum, London).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

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20 December 2011

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

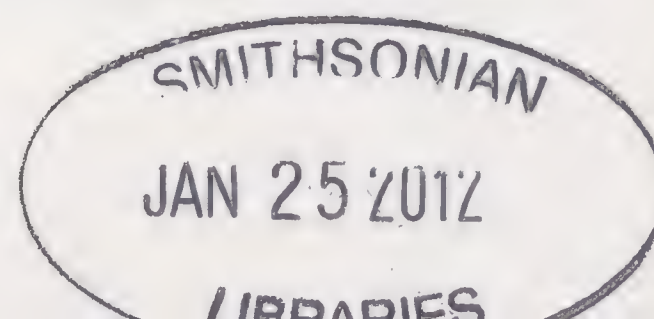
New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 68, part 3, 30 September 2011) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

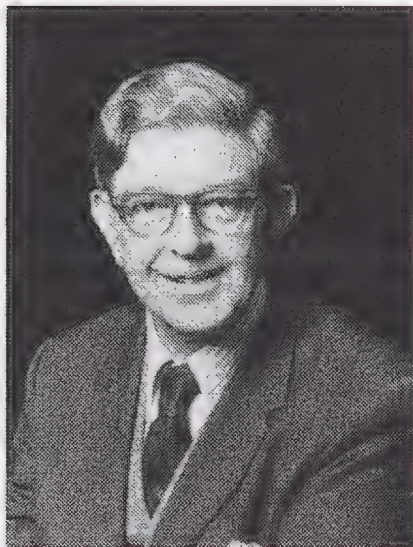
CASE 3576: *Oscinella* Becker, 1909 (Insecta, Diptera, CHLOROPIDAE): proposed conservation by giving it precedence over *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907. M. von Tschirnhaus & E.P. Nartshuk.

CASE 3577: ELATERIDAE Leach, 1815 (Insecta, Coleoptera): proposed precedence over CEBRIONIDAE Latreille, 1802. P.J. Johnson.

CASE 3578: *Copromyza fenestralis* Fallén, 1820 (currently *Pteremis fenestralis*; Insecta, Diptera, SPHAEROCERIDAE): proposed conservation of usage by suppression of syntypes and designation of neotype. J. Roháček.



CASE 3579: *Scarabaeus fimetarius* Linnaeus, 1758 (Insecta, Coleoptera): proposed setting aside of the lectotype and designation of a neotype. R.B. Angus, C.J. Wilson & F.-T. Krell.



William David Lindsay Ride (1926–2011) – Commissioner 1963–2001, Chairman of the Editorial Committees for the 3rd and 4th Editions of the Code, President of the International Commission on Zoological Nomenclature in 1973–1977 & 1983–1989

W.D.L. Ride, a member of the International Commission on Zoological Nomenclature between 1963 and 2001, died in Australia on 6 November 2011. He served as President of the Commission from 1973 to 1977 and again from 1983 to 1989.

His wide experience of public administration is credited by Melville (1995) as providing the successful bridge for the Commission to become a member of the IUBS (International Union of Biological Sciences) which has delegated the authority for the Commission as a representative international scientific body after the demise of the Congress of Zoology in 1972. He was further recognised for his considerable experience in drafting policy, which set the foundations for his chairmanship of the Editorial Committees for both the third and fourth editions of the Code. David Ride contributed significantly to nomenclature, with his extensive service to the Commission, his publications of papers on the topic and guidance of the Commission through times of major transition over several decades.

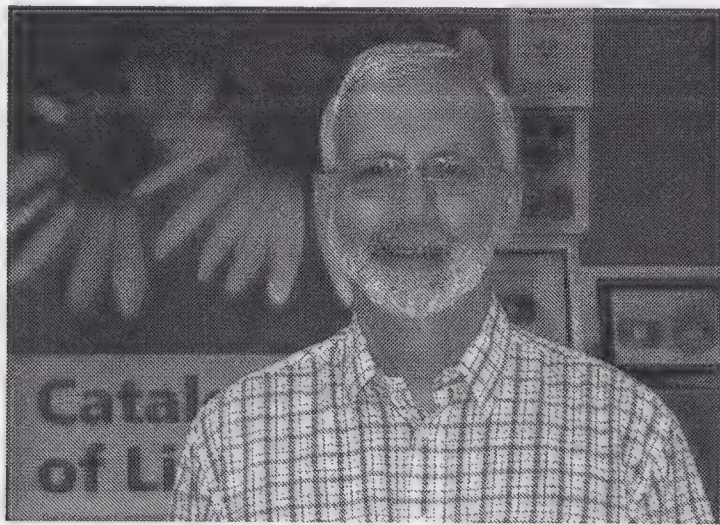
David Ride was a mammalogist and palaeontologist who had studied at the renowned Oxford school in vertebrate anatomy under E.S Goodrich. He published on the native mammals of Australia, and co-authored an index to the genera and species of fossil mammals described from Australia and New Guinea. He edited volumes on biological nomenclature and on endangered species in Australia.

His professional career included extensive influence in Australian museums and academics. He became Director of the Western Australian Museum, Perth in 1957, at the same time he held the position of Reader in Zoology at the University of Western Australia. Jose I. dos R. Furtado, now a senior member of the International Trust for Zoological Nomenclature (ITZN), was an undergraduate at the University of Western Australia when Ride first took up his positions in Perth, and remembers Professor Ride as an inspiring teacher of vertebrate biology who brought evolutionary biology to life by integrating structure with function.

Professor Ride worked for the Australian Biological Resources Study, located within the Commonwealth Scientific and Industrial Research Organisation (CSIRO), in Canberra from 1974 to 1980, and was Director in 1975. He also served as the Head of the School of Applied Science, Canberra College of Advanced Education from 1982–87, and was appointed Principal of the College in 1987. Following his retirement, he became a Visiting Fellow at the Australian National University until 2002. Professor Ride was made a Member of the Order of Australia, an Australian order of chivalry, in 1984.

David Ride's contributions to zoological nomenclature were monumental and live on in the legacy of the Code. The Commissioners and Members of the Trust extend sincere condolences to his family and friends.

Melville, R.V. 1995. Towards stability in the names of animals: A history of the International Commission on Zoological Nomenclature 1895–1995. 92 pp. ITZN, London.



Professor Frank A. Bisby (1945–2011), Director Catalogue of Life and Species 2000

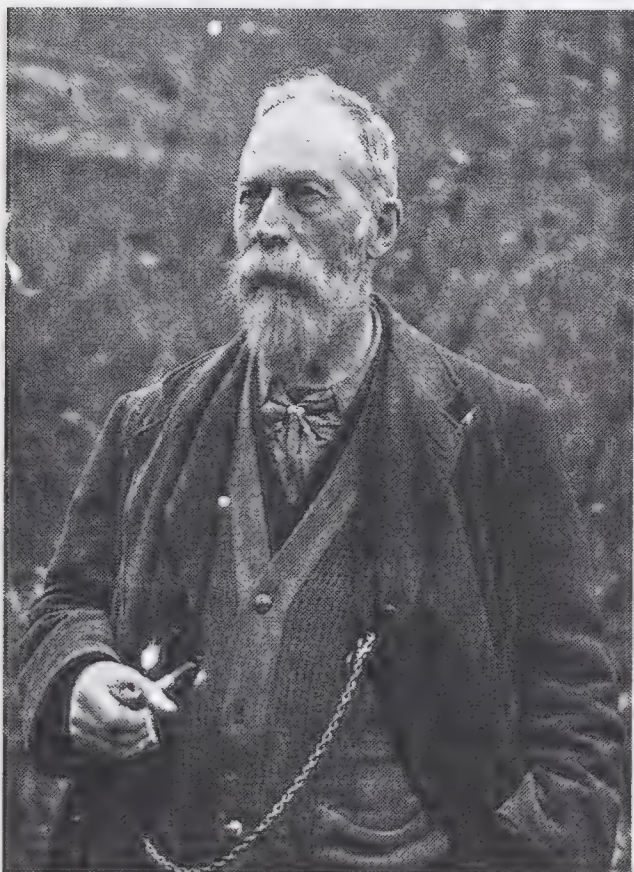
Frank A. Bisby was the initiator and director of the Catalogue of Life and Species 2000, and several other major biodiversity informatics projects that were closely linked with the work of the ICZN. He died unexpectedly on 25 October, the day after the announcement of the release of the 2011 edition of the Catalogue of Life (CoL). This dynamic database lists 1,370,276 species (with

'accepted names' and limited synonymies) sourced from 101 databases that are validated by taxonomic specialists. It is widely seen as the most complete taxonomic e-infrastructure project for living organisms today. Frank was keen on collaboration with the ICZN and worked to ensure that the nomenclatural authority that will be available through ZooBank is linked with the taxon concepts presented in CoL.

Frank Bisby was also Professor of Botany at Reading University, U.K. with a speciality in legumes. He was an inspirational teacher, who was particularly popular for his field courses. He had moved to Reading from a faculty position at Southampton University after finishing his PhD at Oxford.

Frank Bisby was a leader with vision, bringing together teams of people to contribute skills in a global endeavour of cataloguing the world's species. His contributions were enormous and he will be missed.

Anchoring Biodiversity Information: From Sherborn to the 21st century and beyond



Charles Davies Sherborn provided the bibliographic foundation for current zoological nomenclature with his magnum opus *Index Animalium*. In the 43 years he spent working on this extraordinary resource, he anchored our understanding of animal diversity through the published scientific record. No work has equalled it since and it is still in current, and critical, use.

Until now, Sherborn's contribution has been recognised and relied upon by professional taxonomists worldwide but he has escaped the celebration of his accomplishment that is his due. This changed on Friday, 28 October 2011, with a symposium in his honour in the 150th year of his birth organised by the

ICZN, in collaboration with the Society for the History of Natural History at the Natural History Museum (NHM), London. The full day meeting included an international panel of experts on bibliography and biodiversity bioinformatics who linked a view of the past with an active debate on the future of the related fields.

The symposium was structured with an introduction to Sherborn as a man, scientist and bibliographer, then provided historical context for taxonomic indexing from the 19th century to today. Current tools and innovations were presented. The final sessions tackled the future of biological nomenclature, including shifting publishing modes and changing sociology of science in taxonomy. There were fifteen talks from distinguished speakers from around the world, and ten posters, including an exhibition of 'Sherborniana', or artefacts from Sherborn's tenure at the NHM. The event was very well attended, with an audience of over 120 people present throughout most of the day. As the composition of the audience changed somewhat throughout the day, the number of people celebrating Sherborn was impressive.

The symposium was dedicated to Professor Frank Bisby, whose untimely death a few days earlier had shocked and saddened the biodiversity informatics community. Frank had initiated and directed Species 2000 and the Catalogue of Life, ambitious global taxonomy projects that build on the foundation laid by Sherborn's indexes.

The global and temporal reach of this event is being extended through podcasts of all the talks, posters and discussion, including slides and poster downloads, and videos of all the talks available through this site: iczn.org/sherborn and <http://backdoorbroadcasting.net/2011/10/anchoring-biodiversity-information-from-sherborn-to-the-21st-century-and-beyond/>.

The event was organised and sponsored by the ICZN (Int'l Commission on Zoological Nomenclature) and the Society for the History of Natural History, with significant sponsorship support from the Linnean Society, BHL-Europe (Biodiversity Heritage Library-Europe), Pensoft Publishers (*ZooKeys*), The NHM – Natural History Museum, and ViBRANT – Virtual Biodiversity.

The inaugural plenary talk was given by Neal Evenhuis, who provided personal and highly sympathetic insights into the incredible drive and bibliographic skills Sherborn had to harness in his effort to make an essentially universal index to all animal names. Evenhuis served as a Commissioner and President of the ICZN for many years, and is a self-described 'index-aholic' whose wit made Sherborn's labours seem a natural endeavour, at least for those of a Herculean mindset. Gordon McOuat provided a sparkling overview of the evolution of nomenclatural codes and controversies in the decades around Sherborn, bringing the history of science to life. Edward Dickinson presented a detailed scrutiny of Sherborn and Richmond's indexes in ornithology, a taxonomic best-case that illuminates problems that need attention in the larger whole of the corpus. Chris Thompson explained how research on the important (and beautiful!) megadiverse insect group Diptera has benefited from building an outstanding bibliographic index based on Sherborn's original work, with modern tools and additions providing a resource of greater utility than even Sherborn could have imagined. Suzanne Pilsk, with extraordinary zing, described how the Smithsonian libraries have made Sherborn's *Index Animalium* accessible online and how this is the dawn of a new age for bibliographic information access as we go from paper to bytes. This was followed by a companion talk from Nigel Robinson, who showed how Zoological Record's *Index of Organism Names*

integrated *Index Animalium* in collaboration with the Smithsonian libraries, creating a continuously updated bibliographic source for published names.

The session covering current practice in bringing information into the modern age began with Chris Lyal's pertinent observations on limitations of digitizing objects and information. Lyal underscored our current tendency to build forward from the past, using e-charged traditional methods with digital analogues of paper, rather than developing new tools that make the most of cybertechnology and assessment of future needs and opportunities. Henning Scholz gave a thorough overview of the monumental resource that the Biodiversity Heritage Library (BHL) has become, increasing the efficiency of access to early published literature and increasing archival stability for historical works. David Remsen showed how GBIF's (the Global Biodiversity Information Facility) 300 million records are linked through nomenclatural and taxonomic authority files, thus is an expansion on Sherborn's dream. In a tectonic talk presenting results of ICZN committee deliberation, Daphne Fautin, with Miguel Alonso-Zarazaga, detailed the requirements and opportunities for Lists of Available Names (LANs) to proceed through ICZN Article 79 to stabilise large taxonomic sections of nomenclature at once. Although it is not a light task to implement a LAN, a result is that 'nomenclatural archaeology' will find the footing pulled out from under it, thus increasing stability and transparency in scientific names of animals.

In the final session Chris Freeland showed how museums and libraries are enhancing educational outreach, scholarly dissemination and archiving by pursuing a focused programme to make information electronic. Despite a volatile technology landscape, progress in scanning prints, manuscripts and specimens has been prodigious and benefits are irrefutable. Sandra Knapp got back to the source, suggesting that evolution or revolution is necessary to change the way taxonomists work and how we compile the 'definitive references'. Knapp emphasised that modern tools allow, indeed require, the modern equivalent of the monograph to be broader and richer in data content and more regularly updated, and that the role of the taxonomist must become as a collaborative partner, not sole executer, in these works. Lyubomir Penev followed this with a very practical glimpse of what revolutionary e-tools look like, presenting the new work flow and publishing mechanism developed by the journal *ZooKeys*. He pointed out that technical tools can radically change the landscape for the persistent, intractable controversies of registration and e-publication across all biological nomenclature. Rod Page took no prisoners with his manifesto for a truly 'open taxonomy'. His criticism that taxonomy today is only marginally open, not really digital and not notably linked was followed by suggestions of ways this could change with concerted focus and shared vision from the taxonomic and bibliographic community.

The wrap-up plenary by Richard Pyle made a convincing case that, even in this time of major technological improvements across taxonomic science, the most revolutionary change is the means by which we manage and communicate information to the world. Pyle showed how a multitude of major taxonomic resources are all linked through taxonomy and nomenclature. The granddaddy of all the taxonomy projects, where it all comes home, is the GNA (Global Names Architecture), which will be the dynamic index to interconnect and streamline the entire taxonomic enterprise. Finally, a panel discussion was held under the banner 'What Would



Fig. 1. Anchoring Biodiversity Information: From Sherborn to the 21st century and beyond (1) Graham Higley, Head of NHM Libraries & Archives and BHL Chair, dedicates the symposium to Professor Frank Bisby, whose untimely death a few days before shocked the biodiversity informatics community; (2) Neal Evenhuis presents an insightful plenary on the mind of an indexer, with a cartoon drawn by Sherborn in the background showing his exhaustion at the end of his Herculean task; (3) Daphne Fautin and Miguel Alonso-Zarazaga present the results of ICZN Committee deliberation on Lists of Available Names (LANs, Article 79) with a graphic indicating the tension between taxonomic and purely nomenclatural inclusiveness of LANs; (4) Suzanne Pilsk describes the bibliographic and informatics challenges of getting Sherborn's *Index Animalium* online; (5) Chris Freeland puts Sherborn in his crystal ball for the future of biodiversity publishing; (6) Richard Pyle raises a fist in support of Global Names Architecture, showing how taxonomy and names are the nexus for all biodiversity information in his closing plenary talk; (7) Chris Thompson fires another fierce and insightful question; (8) the full panel of speakers under the heading **WWSD? What would Sherborn Do?** From left to right: Suzanne Pilsk, Chris Lyal, Henning Scholz, Edward Dickinson, Neil Evenhuis, Daphne Fautin, Sandy Knapp, Lyubomir Penev, Rod Page, Chris Thompson, Chris Freeland, Gordon McOuat, (behind podium Richard Pyle, David Remsen).

Sherborn Do?’ with all the speakers taking questions from the audience. This provided a lively debate on the importance of names, the role of publishing and the future for scientific bibliography. It was agreed that we have powerful new tools at our disposal, but the major challenge for the future is the required sociological shifts in how taxonomists work and how information is presented. Sherborn would have been proud.

Introduction to the Programme, Dedication to Frank Bisby

Ellinor Michel (ICZN) & Graham Higley (BHL & NHM Libraries)

Session 1: History of Taxonomic Literature, Indexing and Traditional Taxonomic Nomenclature

Opening Keynote: SHNH Annual Ramsbottom Lecture Neal Evenhuis (Bishop Museum):

Sherborn: Work history and impact of bibliography, dating and zoological informatics

Gordon McOuat (University of King’s College, Halifax): *Sherborn’s context: Cataloguing nature*

Edward Dickinson (Aves Press): *Reinforcing the foundations: Filling in the bibliographic gaps in the historical legacy*

F. Christian Thompson (Smithsonian) & Thomas Pape (Copenhagen): *Systema Dipterorum: Sherborn’s critical influence in getting information control over a megadiverse group*

Smithsonian Institution Libraries (Suzanne Pilsik, Martin Kalfatovic & Joel Richard): *Unlocking the Index Animalium: From paper slips to bytes and bits*

Nigel Robinson (Zoological Record) *Sherborn’s Index Animalium integration into ION: access to all*

Session 2: Current Taxonomic Practices

Chris Lyal (NHM): *Digitising legacy taxonomic literature: processes, products and using the output*

Henning Scholz (Museum für Naturkunde Berlin): *BHL-Europe: Tools and Services for Legacy Taxonomic Literature*

David Remsen (GBIF): *Biodiversity Informatics: GBIF’s role in linking information through scientific names*

Daphne Fautin (Univ. Kansas/ICZN) & Miguel Alonso-Zarazaga (MNCN-CSIC/ICZN): *LANs: Lists of Available Names – a new generation for stable taxonomic names in zoology?*

Session 3: Future of Biological Nomenclature

Chris Freeland (Missouri Botanical Garden): *Preserving digitized taxonomic data: problems and solutions for print, manuscript and specimen data*

Sandra Knapp (NHM/IAPT/ITZN): *New workflows for describing and naming organisms*

Lyubomir Penev (Pensoft Publishers): *ZooKeys: Streamlining the registration-to-publication pipeline*

Rod Page (University of Glasgow): *Towards an open taxonomy*

Closing Keynote and wrap-up plenary discussion. Richard Pyle (Bishop Museum): *Towards a Global Names Architecture: The future of indexing scientific names*

ICZN meeting on electronic publication

A public meeting to discuss the proposed amendment on electronic (e-) publication was held following the Sherborn symposium on Saturday 29 October, 2011 in the Natural History Museum, London. Approximately 30 taxonomists, librarians and publishers attended, including eight current Commissioners (Alonso-Zarazaga, Bogutskaya, Fautin, Krell, Pape, Rosenberg, van Tol, Winston) and one ex-Commissioner and member of the 4th Code Editorial Committee (Thompson). Authors of the most strongly argued published Comments on e-publication, both pro and con, were present. The meeting was chaired by Ellinor Michel, ICZN Executive Secretary and Gary Rosenberg, Chair of the 5th Code Editorial Committee. The meeting began with a presentation from Sandra Knapp, Chair of the Botanical Nomenclature Committee and ITZN Member (Trustee), on how e-publication was debated and voted through in the Botanical Congress in Melbourne in July of this year. Details of how e-publication should or should not be implemented in zoology were then discussed vigorously by all attending until a break after three hours. The discussion was wide-ranging and passionate. On reconvening, the group maintained its breadth of representation though with numbers slightly reduced. After a short period at the start of the meeting that might be described informally as a bun fight, discussion was respectful and very constructive. A focused set of questions for the Commission resulted.

Straw votes were taken on summary statements from the discussion, with the following results:

Should registration in an official register and e-publication be mandatorily coupled (with the proviso that there is a working registration mechanism, such as ZooBank)?

YES: 13, NO: 8, ABSTAIN: 3

Is this the time to recognise e-publication for nomenclatural acts? (Or stated in other words, whatever the mechanism, are we in favour of working towards a way to allow e-publication?)

YES: 23, NO: 1, ABSTAIN: 1

Should we aim for Jan 2012 as the start date for allowing e-publication regardless of the status of registration (with a retroactive implementation if the e-publication amendment passes due to the required voting period)?

YES: 20, NO: 1, ABSTAIN: 0

The group made several suggestions of items for the Commission to consider in revising the amendment for e-publication in preparation for a vote:

(1) Is it consistent with the principles of the amendment to have that the proposed changes in Article 8 & 9 be voted on separately from those in Article 10? The Commission was requested to address this as a purely procedural question. The content of Articles 8 and 9 (on publishing and archiving) was felt to be far less problematic than that of 10 (on registration), especially as ZooBank remains an unproven, though promising, infrastructure of scale.

(2) Is it consistent with the principles of the amendment to have staggered start dates, with a later start date for registration than for e-publication? The group agreed that it should be left open for the Commission to decide when registration is ready, and this should be independent of e-publication for the time being.

(3) Mechanisms for how and when to move registration forward need to be addressed as a matter of priority.

(4) Should having an ISBN or ISSN be added as a requirement for the availability of an electronic work (as done in Botany)?

(5) The proposals drafted for the e-publication discussion by the botanists were considered to be well-thought out in general (Chapman, A.D., Turland, N.J. & Watson, M.F. 2010. Report of the Special Committee on Electronic Publication. *Taxon*, **59**(6): 1853–1862) and should be considered in detail by the ICZN Commissioners.

(6) Recommendation 8C was felt to be problematic in two ways: 1) it combines two logically separate recommendations; and 2) the first of these '*Ideally names and nomenclatural acts published in electronic works should also be published simultaneously on paper.*' conveys that electronic publication is 'second class', and also will result in the creation of two competing simultaneous versions, from which it will be difficult to choose a single version of record. One solution would be just to delete the first half so that it reads:

Recommendation 8C. *Electronic works.* *Electronic works should be structured to allow automated indexing and data extraction.*

INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE

Financial Report for the year 2010

The main work of the Commission during the year was on applications from zoologists in 24 countries to resolve problems of zoological nomenclature. These were published in the *Bulletin of Zoological Nomenclature*, together with Opinions (rulings) made by the Commission on other cases. Further applications were under consideration. Advice was given by the Commission's Secretariat in response to a large number of enquiries on matters of nomenclature from zoologists worldwide.

Total income received by the Trust consisted of £32,835 for all publications produced by the Commission, £50,586 from appeal and general donations, £2,774 in bank interest and investment income, and £15,542 capital gain on the sale of investments and £6,988 from special events and lecture fees bringing the total income for the year to £108,725.

Expenditure in 2010 was £99,917 on salaries and fees of the Secretariat of the Commission, £2,918 on appeal expenditure and ZooBank travel, £8,206 for printing the *Bulletin of Zoological Nomenclature* and for the distribution of all publications, and £972 for office expenses and depreciation of office equipment, bringing the total expenditure to £112,013.

The Secretariat of the Commission was again housed in the Natural History Museum, London, whom we thank for their continuing support. The Trust wishes to express its thanks to all the donors listed below who have contributed to the continuation of its work during the year for the international zoological and palaeontological community.

Donations and grants were received from:

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INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED
31 DECEMBER 2010

Income

SALE OF PUBLICATIONS

Bulletin of Zoological Nomenclature	£32,250
International Code of Zoological Nomenclature	456
Official Lists and Indexes	100
Centenary History	29

32,835

GRANTS AND DONATIONS	50,586
INTEREST RECEIVED	5
INVESTMENT INCOME	2,769
CAPITAL GAIN ON SALE OF INVESTMENTS	15,542
SPECIAL EVENTS	6,638
LECTURE FEES	350

108,725

Expenditure

SALARIES, NATIONAL INSURANCE AND FEES	99,917
OFFICE EXPENSES	972
PRINTING OF BULLETIN AND DISTRIBUTION OF PUBLICATIONS	8,206
APPEAL EXPENDITURE INCLUDING TRAVEL	2,918

112,013

DEFICIT FOR THE YEAR CARRIED TO BALANCE SHEET	(£3,288)
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Case 3567

***Bulimus lineatus* Bruguière, 1789 (Gastropoda, UROCOPTIDAE; currently *Macroceramus lineatus*) and *Bulimus lineatus* Draparnaud, 1801 (Gastropoda, ACICULIDAE; currently *Acicula lineata*): proposed conservation of specific names**

Francisco W. Welter-Schultes

Zoologisches Institut, Berliner Strasse 28, 37073 Göttingen, Germany
(e-mail: fwelter@gwdg.de)

Abstract. The purpose of this application, under Articles 23.9.5, 23.10, 57.2.2 and 81 of the Code, is to conserve two specific gastropod names *Bulimus lineatus* Bruguière, 1789 (Pulmonata: UROCOPTIDAE, currently *Macroceramus lineatus*, from Haiti) and *Bulimus lineatus* Draparnaud, 1801 (currently *Acicula lineata*, Caenogastropoda: ACICULIDAE, from central Europe) by ruling under the plenary power to disregard their primary homonymy.

Keywords. Nomenclature; taxonomy; Gastropoda; UROCOPTIDAE; ACICULIDAE; *Macroceramus lineatus*; *Acicula lineata*; caenogastropods; stylommatophoran pulmonate snails; Europe; Haiti.

1. *Bulimus lineatus* Bruguière, 1789 (in Bruguière, 1792, p. 323; Gastropoda, UROCOPTIDAE, currently *Macroceramus lineatus*, from Haiti) and *Bulimus lineatus* Draparnaud, 1801 (p. 67; Gastropoda, ACICULIDAE, currently *Acicula lineata*, from Europe) are primary homonyms (Articles 53.3, 57.2 of the Code). The identities of both nominal taxa are not disputed.

2. Both names are currently used for 'valid' species. *Acicula lineata* is a frequent and important species from Europe, where it is distributed from southern France to southern Germany and eastern Austria (Boeters et al., 1989, p. 60, Falkner et al., 2002, p. 69). It is the type species of *Acicula* Hartmann, 1821 (ACICULIDAE). *Macroceramus lineatus* is a common species in Haiti (Pilsbry, 1904, p. 122, Wetherbee & Clench, 1984, p. 10, Richardson, 1991, p. 145).

3. These two species have not been considered as congeneric after 1899. They belong to different taxonomic groups: *Acicula* Hartmann, 1821 is a caenogastropod, while *Macroceramus* Guilding, 1828, a stylommatophoran pulmonate snail. These genera live in different regions without overlap: *Macroceramus* in Mexico, Central America and the Caribbean, *Acicula* in Europe, the Caucasian region and northern Africa.

4. Because *Acicula lineata* was considered a very important species, Falkner et al. (2002, p. 69) intended to fix *Bulimus lineatus* Bruguière, 1789 as a nomen oblitum under Article 23.9.2, and listed the 25 references for *Acicula lineata* as required by Article 23.9.1.2. The authors argued that *Bulimus lineatus* Bruguière, 1789 had not been used since 1899, but overlooked the fact that the name had been used by Pilsbry (1904, p. 122) and subsequent authors in the genus *Macroceramus*. Terrestrial

gastropod species from Haiti are much more rarely mentioned in the recent literature and internet resources than species from central Europe, which explains why its usage was not detected in 2002.

5. Since the action of Falkner et al. (2002) was taken in error, the case has to be referred to the Commission under Article 23.10, and it is proposed to conserve the names under Article 23.9.5 of the Code.

6. Boeters et al. (1989, p. 60) argued that Draparnaud (1805, p. 57) established *Auricula lineata* as a new species, and that the 1801 name could be suppressed to avoid homonymy with *Bulimus lineatus* Bruguière, 1789. However Draparnaud (1805) had expressly used the 1801 name, so this option would have created confusion in Europe and was rejected by subsequent authors (Falkner et al., 2002).

7. It is proposed to disregard the primary homonymy and regard both names as available. An alternative solution would be to suppress the Haitian name, because the European name has been used more frequently. However, for students and scientists in Haiti suppression of the Haitian name may result in further confusion.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *lineatus* Draparnaud, 1801, as published in the binomen *Bulimus lineatus*, is not invalid by reason of being a junior primary homonym of *lineatus* Bruguière, 1789, as published in the binomen *Bulimus lineatus*;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *lineatus* Bruguière, 1789, as published in the binomen *Bulimus lineatus*;
 - (b) *lineatus* Draparnaud, 1801, as published in the binomen *Bulimus lineatus*, with the endorsement that is not invalid by reason of being a junior primary homonym of *lineatus* Bruguière, 1789, as published in the binomen *Bulimus lineatus*, as ruled in (1) above.

Acknowledgements

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References

- Boeters, H.D., Gittenberger, E. & Subai, P. 1989. Die Aciculidae (Mollusca, Gastropoda, Prosobranchia). *Zoologische Verhandlungen*, **252**: 1–234. (<http://www.repository.naturalis.nl/record/317686>)
- Bruguière, J.G. 1792. *Encyclopédie méthodique. Histoire naturelle des vers. Tome premier. [ABE-CON]*. pp. [1–3], j–xvii [= 1–18], 1–757. Panckoucke, Paris. (<http://resolver.sub.uni-goettingen.de/purl?PPN583853528>)
- Draparnaud, J.P.R. 1801. *Tableau des mollusques terrestres et fluviatiles de la France*. – pp. [1–2], 1–116. Montpellier, Paris. (Renaud; Bossange, Masson & Besson). (<http://www.biodiversitylibrary.org/item/47270>)
- Draparnaud, J.P.R. [1805]. *Histoire naturelle des mollusques terrestres et fluviatiles de la France. Ouvrage posthume. Avec XIII planches*. pp. [1–9], j–viii [= 1–8], 1–134, [Pl. 1–13] (<http://www.biodiversitylibrary.org/item/46572>)
- Falkner, G., Ripken, T.E.J. & Falkner, M. 2002. Mollusques continentaux de France. Liste de référence annotée et bibliographie. *Collection Patrimoines Naturels*, **52**. pp. [1–2], 1–350, [1–3].

- Guilding, L.** 1828. Observations on the zoology of the Caribæan Islands. *Zoological Journal*, **4**: 164–175.
- Hartmann, W.** 1821. System der Erd- und Flußschnecken der Schweiz. Mitvergleichender Aufzählung aller auch in den benachbarten Ländern, Deutschland, Frankreich und Italien sich vorfindenden Arten. *Neue Alpina*, **1**: 194–268, Taf. I-II [= 1–2]. Winterthur.
- Pilsbry, H.A.** 1904. *Manual of Conchology, structural and systematic. With illustrations of the species. Second Series: Pulmonata. Vol. XVI [= 16]. Urocoptidæ, Achatinidæ.* – pp. I–XL [= 1–40], 1–329, Pl. 1–37 (<http://www.biodiversitylibrary.org/item/16305>)
- Richardson, C.L.** 1991. Urocoptidae: Catalog of species. *Tryonia*, **22**: i [= 1], 1–245.
- Wetherbee, D.K. & Clench, W.J.** 1984. Three new species of *Macroceramus* (Mollusca: Urocoptidae) from the Dominican Republic. *Caribbean Journal of Science*, **20** (1/2): 9–12.

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Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3569

***Limax fasciatus* Razoumowsky, 1789 (LIMACIDAE) and *Limax fasciatus* Nilsson, 1823 (currently *Arion fasciatus*, ARIONIDAE): proposed conservation of both specific names (Gastropoda, Stylommatophora)**

Ted von Proschwitz

Naturhistoriska Museet, Göteborg, Sweden

(e-mail: ted.v.proschwitz@vgregion.se)

Gerhard Falkner

Staatliches Museum für Naturkunde Stuttgart, Germany

(e-mail: Falkner@malaco.de)

Abstract. The purpose of this application, under Articles 23.9.5 and 23.10 of the Code, is to conserve the specific name of *Arion* (*Carinarion*) *fasciatus* (Nilsson, 1823) (ARIONIDAE), originally published in the combination *Limax fasciatus* as a primary homonym of *Limax fasciatus* Razoumowsky, 1789 (LIMACIDAE). The two names have not been considered congeneric since the 19th century. We propose to conserve the name *Limax fasciatus* Nilsson, 1823, by ruling that the name is not invalid by reason of being a junior primary homonym.

Keywords. Nomenclature; taxonomy; Gastropoda; Pulmonata; LIMACOIDEA; LIMACIDAE; ARIONOIDEA; ARIONIDAE; *Limax*; *Arion*; *Carinarion*; *Limax fasciatus*; *Arion fasciatus*; slugs.

1. The name *Arion* (*Carinarion*) *fasciatus* (Nilsson, 1823) has been used world-wide for many decades to refer unambiguously to a well-known common and widely distributed species of land slug, which is also of importance in the applied sciences (e.g. Godan, 1983; Barker, 2002; South, 1992). The prevailing usage of this name is demonstrated in the 25 works cited in Falkner et al. (2002, p. 141, note 269). Additional citations demonstrating usage include Walden (1955), Lohmander (1959), Hudec (1960), Chichester & Getz (1969), Getz & Chichester (1971); Grossu (1970), Wiktor (1973, 1996), Riedel & Wiktor (1974), McCracken & Selander (1980), Reischütz (1986), Backeljau et al. (1997), Schmid (1997), Turgeon et al. (1998), Jordaens et al. (2002) and Geenen et al. (2006). In Geenen et al. (2006) the three species of the subgenus *Carinarion* are synonymised under *Arion fasciatus*. This emphasises the necessity to conserve Nilsson's name. There are also multiple other examples of usages, especially in the faunistic literature. A list of additional 50 references demonstrating the usage of the name *Arion fasciatus* is held by the Commission Secretariat.

2. *Arion* (*Carinarion*) *fasciatus* (Nilsson, 1823) was originally described as *Limax fasciatus* Nilsson, 1823 (p. 3). This was a junior primary homonym of *Limax fasciatus*

Razoumowsky, 1789 (p. 267), and should normally have been regarded as permanently invalid. With the aim of preserving the current usage of the combination *Arion fasciatus* (Nilsson), an action was taken in accordance with Article 23.9.2 of the Code by Falkner et al. (2002, p. 141, note 269) and *Limax fasciatus* Razoumowsky, 1789 was declared a nomen oblitum. We recently found that this action was taken in error and that the conditions of the relevant Articles were not met. The name *Limax fasciatus* Razoumowsky, 1789, has been used as valid at least twice after 1899. Taylor (1906, p. 266) used it in the combination *Limax maximus* var. *fasciata* Razoumowsky, 1789, to denote a variety of *Limax maximus* Linnaeus, 1758, and Alzona (1971, p. 149) used it in the combination *Limax albipes fasciatus* Razoumowsky, 1789, to denote a subspecies of *Limax albipes* Dumont & Mortillet, 1853 (in Dumont & Mortillet, 1852–1854). In such a case, Article 23.10 of the Code (Erroneous reversal of precedence) requires reference to the Commission.

3. Meanwhile the perception of *Limax fasciatus* Razoumowsky, 1789 has changed. A working-group of the Staatliches Museum für Naturkunde Stuttgart (Sektion Malakologie) has undertaken research in the type locality near Lausanne, in order to clarify the identity of that unjustly neglected nominal taxon. As a result of the historical studies of Grossenbacher (1990) the type locality could be more precisely defined and it was found that the species is sufficiently described to be recognised in the field. A large revision is in preparation and from preliminary results it seems very likely that this early name for an alpine *Limax* needs to be revalidated. Up to now no other available names which could potentially be applied to Razoumowsky's *Limax* species have been identified. We thus think it desirable to reinstate its priority over *Limax fasciatus* Nilsson, 1823, and then deal with the latter junior homonym by recourse to a different provision of the Code.

4. According to modern taxonomic views there is no conflict or possible confusion of *Limax fasciatus* Nilsson, 1823 with *Limax fasciatus* Razoumowsky, 1789. Shortly after its description *Limax fasciatus* Nilsson, 1823 was recognised as belonging to the genus *Arion* A. Férusac, 1819. In the 19th century it was consistently placed in this genus, either as a valid species or as a synonym, e.g. by C. Pfeiffer (1828, p. 11), Nordenskiöld & Nylander (1856, p. 3); Westerlund (1865, p. 27), Collinge (1892, p. 77). Thereafter the two species have never been included in the same genus. Introducing a replacement name for *Limax fasciatus* Nilsson, 1823, in general use as *Arion fasciatus* (Nilsson, 1823), would cause considerable confusion. Article 23.9.5 of the Code (names not considered congeneric after 1899) states that such a case should be referred to the Commission. The present application aims to conserve the prevailing usage in the interests of stability and universality of nomenclature.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to rule that reversal of precedence of *Limax fasciatus* Razoumowsky, 1789 and *Limax fasciatus* Nilsson, 1823 by Falkner et al. (2002, p. 141, note 269) was erroneous and the priority of *Limax fasciatus* Razoumowsky, 1789 is maintained;
- (2) to use its plenary power to rule that the specific name *Limax fasciatus* Nilsson, 1823, is not invalid by reason of being a junior primary homonym of *Limax fasciatus* Razoumowsky, 1789;
- (3) to place on the Official List of Specific Names in Zoology the following names:

- (a) *fasciatus* Nilsson, 1823, as published in the binomen *Limax fasciatus*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *Limax fasciatus* Razoumowsky, 1789;
- (b) *fasciatus* Razoumowsky, 1789, as published in the binomen *Limax fasciatus*.

References

- Alzona, C. 1971. Malacofauna Italica. Catalogo e bibliografia dei Molluschi viventi, terrestri e d'acqua dolce. *Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*, **111**: 433 pp., 1 p. Errata.
- Backeljau, Th., De Bruyn, L., De Wolf, H., Jordaens, K., Van Dongen, S. & Winnepenninckx, B. 1997. Allozyme diversity in slugs of the *Carinarion* complex (Mollusca, Pulmonata). *Heredity*, **78**: 445–451.
- Barker, G.M. (Ed.). 2002. *Molluscs as crop pests*. XII, 468 pp. CABI Publishing, Wallingford, U.K.
- Chichester, L.F. & Getz, L.L. 1969. The zoogeography and ecology of Arionid and Limacid slugs introduced into northeastern North America. *Malacologia*, **7**(2/3): 313–346.
- Collinge, W.E. 1892. A Review of the Arionidae of the British Isles. *The Conchologist*, **2**(3): 56–66, (4): 76–83.
- Dumont, F. & Mortillet, G. de. 1852–1854. Histoire naturelle des Mollusques terrestres et d'eau douce vivants et fossiles de la Savoie et du bassin du Lemman. *Bulletin de la Société d'Histoire naturelle de Savoie*, **2** [1852]: 14–142; **3** [1853]: 1–78; *Annales de la Société d'Histoire naturelle de Savoie*, **1854**: 81–152, 239–248. Chambéry. [Separatum: pp. 1–270. Genève].
- Falkner, G., Ripken, Th. E.J. & Falkner, M. 2002. Mollusques continentaux de France. Liste de Référence annotée et Bibliographie. *Collection Patrimoines Naturels*, **52**: 350 pp.
- Getz, L.L. & Chichester, L.F. 1971. Introduced European slugs. *The Biologist*, **53**(3): 118–127.
- Geenen, S., Jordaens, K. & Backeljau, Th. 2006. Molecular systematics of the *Carinarion* complex (Mollusca: Gastropoda: Pulmonata): a taxonomic riddle caused by a mixed breeding system. *Biological Journal of the Linnean Society*, **89**(4): 589–604.
- Godan, D. 1983. *Pest slugs and snails. Biology and control*. [Translated from the German by S. Gruber.] 445 pp. Springer-Verlag, Berlin.
- Grossenbacher, K. 1990. Die Entdeckung des Fadenmolches durch Graf Gregor Razoumowsky in der Schweiz. *Jahrbuch des Naturhistorischen Museums Bern*, **10** [1987/1989]: 151–167.
- Grossu, A.V. 1970. Revizuirea speciilor genului *Arion* Férussac în România (Gastropoda, Arionidae). *Comunicările de Zoologie, Societatea de Științe Biologice din România*: 62–74.
- Hudec, V. 1960. Rozdíly na pohlavních orgánech. plzáků *Arion circumscriptus* Johnst. a *Arion fasciatus* (Nilss.). *Časopis Národního Musea (Praha)*, Odd. přír., **129**(2): 204–205.
- Jordaens, K., Van Dongen, S., Van Riel, P., Geenen, S., Verhagen, R. & Backeljau, Th. 2002. Multivariate morphometrics of soft body parts in terrestrial slugs: comparison between two datasets, error assessment and taxonomic implications. *Biological Journal of the Linnean Society*, **75**(4): 533–542.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Lohmander, H. 1959. Faunistiskt fältarbete i västra och norra Jylland 1954–57. Landmollusken. *Göteborgs Naturhistoriska Museum Årstryck*, **1959**: 33–104.
- McCracken, G.F. & Selander, R.K. 1980. Self-fertilization and monogenic strains in natural populations of terrestrial slugs. *Proceedings of the National Academy of Sciences, USA*, **77**(1): 684–688.
- Nilsson, S. 1823. *Historia Molluscorum Sveciae terrestrium et fluviatilium breviter delineata*. Tit., XX, 124 pp. J.H. Schuboth, Lundae. [For the publication date see B.B. Woodward 1924, *Proceedings of the Malacological Society of London*, **16**: 23.]
- Nordenskiöld, A.E. & Nylander, A.E. 1856. *Finlands Mollusker*. Tit., XVIII, 114, [2] pp., 7 pls. Simeli, Helsingfors.
- Pfeiffer, C. 1828. *Naturgeschichte deutscher Land- und Süsswasser-Mollusken*. Dritte Abtheilung: VI, 84 pp., 8 Taf. Grossherzogl. Sächs. privil. Landes-Industrie-Comptoir, Weimar.

- Razoumowski, G. de.** 1789. *Histoire naturelle du Jorat et de ses environs; Et celle des trois Lacs de Neufchâtel, Morat et Bienne; Précédées d'un Essai sur le Climat, les Productions, le Commerce, les Animaux de la partie du Pays de Vaud ou de la Suisse Romande, qui entre dans le plan de cet Ouvrage*, Tome premier. [4], XVI, 322 pp. Jean Mourer, Lausanne. [Mollusca: pp. 266–278.]
- Reischütz, P.L.** 1986. Die Verbreitung der Nacktschnecken Österreichs (Arionidae, Milacidae, Limacidae, Agriolimacidae, Boettgerillidae) – (Supplement 2 des Catalogus Faunae Austriae). *Sitzungsberichte der österreichischen Akademie der Wissenschaften, math.-naturw. Kl., Abt. I*, **195**(1/5): 67–190.
- Riedel, A. & Wiktor, A.** 1974. Arionacea – Ślimaki krężalkowate i ślinikowate (Gastropoda: Stylommatophora). *Fauna Polski*, vol. 2. 140 pp. Państwowe wydawnictwo Naukowe, Warszawa.
- Schmid, G.** 1997. „Malakologische Zuckungen“ Momentaufnahmen zur Molluskenfauna Baden-Württembergs. *Veröffentlichungen für Naturschutz und Landschaftspflege in Baden-Württemberg*, **71/72**(2): 719–858.
- South, A.** 1992. *Terrestrial Slugs: Biology, ecology and control*. X, 428 pp. Chapman & Hall, London.
- Taylor, J.W.** 1906. *Monograph of the land- and freshwater Mollusca of the British Isles*, vol. 2 (Part 12). Pp. 225–280 & 1–16, pls. 15, 22, 23, 25. Taylor Brothers, Leeds.
- Turgeon, D.D., Quinn, J.F. (Jr.), Bogan, A.E., Coan, E.V., Hochberg, F.G., Lyons, W.G., Mikkelsen, P.M., Neves, R.J., Roper, C.F.E., Rosenberg, G., Roth, B., Scheltema, A., Thompson, F.G., Vecchione, M. & Williams, J.D.** 1998. *Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks*, 2nd edition. American Fisheries Society, Special Publication, **26**: IX, 526 pp. Bethesda, Maryland.
- Waldén, H.W.** 1955. The land Gastropoda of the vicinity of Stockholm. *Arkiv för Zoologi*, (2)7(21): 391–448, 1 pl.
- Westerlund, C.A.** 1865. *Sveriges land- och sötvatten-mollusker*. [4], 142 pp. Gleerups, Lund.
- Wiktor, A.** 1973. Die Nacktschnecken Polens. *Monografie Fauny polski*, **1**: 182 pp., 94 pp. illustrations, 1 p. table of contents. Polska Akademia Nauk, Warszawa-Kraków.
- Wiktor, A.** 1996. The Slugs of the Former Yugoslavia (Gastropoda terrestria nuda – Arionidae, Milacidae, Limacidae, Agriolimacidae). *Annales zoologici*, **46**(1/2): 1–110.

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Case 3568

***Stirpulina* Stoliczka, 1870 (Mollusca, Bivalvia, Anomalodesmata, CLAVAGELLIDAE): proposed conservation by suppression of *Tubolana* Bivona Bernardi, 1832**

Martyn E.Y. Low

Department of Marine and Environmental Sciences, Graduate School of Engineering and Science, University of the Ryukyus, 1 Senbaru, Nishihara, Okinawa 903–0213, Japan (e-mail: m.low@me.com)

S.K. Tan

Raffles Museum of Biodiversity Research, Department of Biological Sciences, National University of Singapore, Block S6, Science Drive 2, #03–01, Singapore 117546, Republic of Singapore (e-mail: dbstsk@nus.edu.sg)

Abstract. The purpose of this application, under Article 23.9.3 and Recommendation 23A of the Code, is to conserve the genus name *Stirpulina* Stoliczka, 1870 for a group of watering pot shells. The genus name *Stirpulina* is in widespread and current use. This name is threatened by the little-used senior subjective synonym *Tubolana* Bivona Bernardi, 1832. It is proposed that the name *Stirpulina* be conserved by the suppression of *Tubolana*.

Keywords. Nomenclature; taxonomy; Bivalvia; Anomalodesmata; CLAVAGELLOIDEA; CLAVAGELLIDAE; *Stirpulina*; *Tubolana*; *Stirpulina coronata*; *Tubolana digitata*; watering pot shells; Upper Cretaceous; Recent.

1. Bivona Bernardi (1832, pp. 55, 56) established the genus name *Tubolana* for a single new fossil species *Tubolana digitata* Bivona Bernardi, 1832 (pp. 56, 57), the type species by monotypy. This name was also spelt as *Tubulana ditata* (p. 56) in the original publication. All subsequent publications have used the spelling *Tubolana digitata* (e.g. di Monterosato, 1877, p. 40; Smith, 1962, p. 170; Keen & Smith, 1969, p. N858; Stallwood, 1995, p. 88).

2. The species name *Tubolana digitata* Bivona Bernardi, 1832 has not been used as a valid name since it was first synonymised with the fossil species *Clavagella bacillaris* Deshayes, 1830 (pp. 239, 240) by di Monterosato, 1877 (p. 40). This synonymy has not been disputed (e.g. Smith, 1962; Keen & Smith, 1969; Stallwood, 1995).

3. Stoliczka (1870, pp. xv, 27, 28) established the generic name *Stirpulina* for two fossil species: *Clavagella coronata* Deshayes, 1824 (pp. 8, 9) and *Clavagella bacillaris* Deshayes, 1830. *Clavagella coronata* is the type species by original designation (Stoliczka, 1870, p. xv).

4. The genus name *Tubolana* Bivona Bernardi, 1832 is a senior subjective synonym of *Stirpulina* Stoliczka, 1870 as the type species of *Tubolana* (*T. digitata*) is a junior subjective synonym of a species included in *Stirpulina* (*Clavagella bacillaris*; see Stallwood, 1995, p. 88).

5. The genus *Stirpulina* is currently composed of fourteen fossil and one extant species known from the Late Cretaceous onwards (see Stallwood, 1995, p. 88). The single extant species is *Clavagella ramosa* Dunker, 1882 (p. 172), which was first transferred to the genus *Stirpulina* by Fujita (1929, p. 62). *Stirpulina ramosa* (Dunker, 1882) has been of considerable use in understanding the evolution of tube formation in bivalve molluscs (e.g. Savazzi, 1982, 2005; Morton, 2005, 2006b, 2007). The genus *Stirpulina* is currently assigned to the family CLAVAGELLIDAE d'Orbigny, 1845 (superfamily CLAVAGELLOIDEA d'Orbigny, 1845, Anomalodesmata Dall, 1889) (see Morton, 2005, p. 204; Bieler et al. in Bouchet & Rocroi, 2010, p. 132).

6. The genus *Stirpulina* has been in widespread and current use since it was first established by Stoliczka in 1870. In the past 50 years, at least 30 publications by 17 different authors using *Stirpulina* as a valid genus have been located (e.g. Hölzl, 1961, p. 65; Smith, 1962, p. 168, 1963, p. 15; Keen & Smith, 1969, p. N858; Buccheri, 1970, p. 241; B.J. Smith, 1976, p. 195; Maxwell, 1978, p. 29; Savazzi, 1982, p. 293; Morton, 1984, p. 464; Pojeta & Sohl, 1987, p. 5, 1988, p. 826; Jones & Nicol, 1989, p. 320; Darga, 1990, p. 20; Mayoral, 1990, p. 117; Stallwood, 1995, p. 84; Dulai, 1996, p. 71; Morton, 2002a, p. 546, 2002b, p. 13; 2003, p. 389, 2004a, p. 37; 2004b, p. 246, 2004c, p. 355; 2005, p. 202; 2006a, p. 187, 2006b, p. 233, 2006c, p. 103, 2007, p. 19, 2009, p. 252; Savazzi, 2005, p. 180; Morton & Grebneff, 2011, p. 125). This fulfils the conditions of Article 23.9.1.2 of the Code (Reversal of Precedence).

7. Since 1899, just five publications using the genus name *Tubolana* have been located. Two publications considered this name to be valid but taxonomically unplaced (Vokes, 1967, p. 341; 1980, p. 214). Two other publications considered this name to be valid and a possible senior synonym of *Stirpulina* but gave preference to the name *Stirpulina* (L.A. Smith, 1962, p. 170; Keen & L.A. Smith, 1969, p. N858). The final and most recent use of the name *Tubolana* was in a reprint of di Monterosato's collected works (Giannuzzi Savelli, 1989, p. 1407), where all instances of the name *Tubolana* (without discussion of the validity of the name) as used by di Monterosato were listed. The post-1899 use of *Tubolana* as a valid generic name in the first four publications means that the conditions of Article 23.9.1.1 of the Code (Reversal of Precedence) are not met and a ruling by the Commission is needed for formal suppression of the name.

8. The generic name *Stirpulina* Stoliczka, 1870 has been used as valid in at least 30 publications in the past 50 years. The generic name *Tubolana* Bivona Bernardi, 1832 has been used as valid only four times since 1899. Although the conditions of Article 23.9.1 for maintaining current usage are not fulfilled, the conservation of the name *Stirpulina* Stoliczka, 1870 would best serve nomenclatural stability.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *Tubolana* Bivona Bernardi, 1832 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Stirpulina* Stoliczka, 1870 (gender: feminine), type species by original designation *Clavagella coronata* Deshayes, 1824;

- (3) to place on the Official List of Specific Names in Zoology the name *coronata* Deshayes, 1824, as published in the binomen *Clavagella coronata* (specific name of the type species of *Stirpulina* Stoliczka, 1870);
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Tubolana* Bivona Bernardi, 1832, as suppressed in (1) above.

References

- Bieler, R., Carter, J.G. & Coan, E.V. 2010. A classification of bivalve families. Pp. 113–133 in Bouchet, P. & Rocroi, J.-P., Nomenclator of bivalve families. *Malacologia*, **52**(2): 1–184.
- Bivona Bernardi, A. 1832. Caratteri di un nuovo genere di conchiglie fossili, estratti dalle Collettanee di Storia naturale. *Effemeridi Scientifiche e Letterarie per la Sicilia*, **1**: 55–62.
- Bouchet, P. & Rocroi, J.-P. 2010. Nomenclator of Bivalve families. *Malacologia*, **52**(2): 1–184.
- Buccheri, G. 1970. Una malacofauna calabriana del territorio di Sciacca (Sicilia sud-occidentale). *Geologica Romana*, **9**: 239–274.
- Dall, W.H. 1889. On the hinge of pelecypods and its development, with an attempt toward a better subdivision of the group. *American Journal of Science*, (3)**38**(228): 445–462.
- Darga, R. 1990. The Eisenrichterstein near Hallthurm, Bavaria: An Upper Eocene Carbonate Ramp (Northern Calcareous Alps). *Facies*, **23**(1): 17–33.
- Deshayes, G.P. 1824. *Description des coquilles fossiles des environs de Paris. Tome 1. Conchifères*, pp. 1–178. Deshayes, Jeune, Frères et Treuttel, Paris.
- Deshayes, G.P. 1830. *Encyclopédie méthodique. Histoire naturelle des Vers*, vol. 2, pt. 1, vii, 256 pp. Agasse, Paris.
- Dulai, A. 1996. Anterior fringe fragment of *Clavagella* (Bivalvia) from the Middle Miocene (Badenian) sandy deposits of Szob (Börzsöny Mts., Hungary). *Fragmenta Mineralogica et Palaeontologica*, **18**: 71–78.
- Dunker, G. 1882. Index Molluscorum Maris Japonici. *Novitates conchologicae*, Abbildung und Beschreibung neuer Conchylien, Supplement 7: i–vii, [1], 1–301, [1].
- Fujita, T. 1929. [Report on the dredged shells of Tateyama Bay (1)]. *Venus*, **1**(2): 58–65.
- Giannuzzi Savelli, R.G. 1989. *Opera Omnia*, vol. 4. 1187–1793 pp. Unione Malacologica Italiana, Palermo, Italy.
- Hözl, O. 1961. Leitende Molluskenarten aus der marinen und brackischen Molasse Oberbayerns. *Paläontologische Zeitschrift*, **35**(1–2): 62–78.
- Jones, D.S. & Nicol, D. 1989. Eocene clavagellids (Mollusca: Pelecypoda) from Florida: The first documented occurrence in the Cenozoic of the Western Hemisphere. *Journal of Paleontology*, **63**(3): 320–323.
- Keen, A.M. & Smith, L.A. 1969. Superfamily Clavagellacea. Pp. N857–N859 in Moore, R.C. (Ed.), *Treatise on invertebrate paleontology. Part N. Volume 2. Mollusca 6. Bivalvia*, The Geological Society of America, Inc. & University of Kansas, Lawrence.
- Maxwell, P.A. 1978. Taxonomic and nomenclatural notes on some New Zealand Cenozoic Mollusca, with descriptions of new taxa. *New Zealand Journal of Zoology*, **5**(1): 15–46.
- Mayoral, E. 1990. Bivalvia: Clavagellacea (*Stirpulina pliocenica* nov. sp.) del Neógeno Superior de la Cuenca del Bajo Guadalquivir. *Treballs del Museu de Geologia de Barcelona*, **1**: 117–134.
- Monterosato, M. di. 1877. Catalogo dell Conchiglie fossili di Monte Pellegrino e Ficarazzi presso Palermo. *Bollettino del Reale Comitato Geologico d'Italia*, **1–2**: 28–41.
- Morton, B. 1984. Adventitious tube construction in *Brechites vaginiferus* (Bivalvia: Anomalodesmata: Clavagellacea) with an investigation of the juvenile of “*Humphreyia strangei*”. *Journal of Zoology*, **203**(4): 461–484.
- Morton, B. 2002a. Biology and functional morphology of the watering pot shell *Brechites vaginiferus* (Bivalvia: Anomalodesmata: Clavagellidae). *Journal of Zoology*, **257**(4): 545–562.
- Morton, B. 2002b. The biology and functional morphology of *Humphreyia strangei* (Bivalvia: Anomalodesmata: Clavagellidae): an Australian cemented watering pot shell. *Journal of Zoology*, **258**(1): 11–25.

- Morton, B.** 2003. The biology and functional morphology of *Dianadema* gen. nov. *multangularis* (Tate, 1887) (Bivalvia: Anomalodesmata: Clavagellidae). *Journal of Zoology*, **259**(4): 389–401.
- Morton, B.** 2004a. The biology and functional morphology of *Foegia novaezelandiae* (Bivalvia: Anomalodesmata: Clavagelloidea) from Western Australia. *Malacologia*, **46**(1): 37–55.
- Morton, B.** 2004b. Biology and functional morphology of *Kendrickiana* gen. nov. *veitchi* (Bivalvia: Anomalodesmata: Clavagelloidea) from southern Australia. *Invertebrate Biology*, **123**(3): 244–259.
- Morton, B.** 2004c. The biology and functional morphology of *Nipponoclava gigantea*: clues to the evolution of tube dwelling in the Penicillidae (Bivalvia: Anomalodesmata: Clavagelloidea). *Journal of Zoology*, **264**(4): 355–369.
- Morton, B.** 2005. Biology and functional morphology of a new species of endolithic *Bryopa* (Bivalvia: Anomalodesmata: Clavagelloidea) from Japan and a comparison with fossil species of *Stirpulina* and other Clavagellidae. *Invertebrate Biology*, **124**(3): 202–219.
- Morton, B.** 2006a. The functional morphology of *Penicillus philippinensis* (Anomalodesmata: Clavagelloidea) and the evolution of a unique muscular system in the Bivalvia. *Records of the Western Australian Museum*, **23**(2): 175–192.
- Morton, B.** 2006b. Structure and formation of the adventitious tube of the Japanese watering-pot shell *Stirpulina ramosa* (Bivalvia, Anomalodesmata, Clavagellidae) and a comparison with that of the Penicillidae. *Invertebrate Biology*, **125**(3): 233–249.
- Morton, B.** 2006c. A new species and first record of the endobenthic clavagellid *Stirpulina* (Bivalvia: Anomalodesmata) from the late Eocene of southern Western Australia. *Alcheringa: an Australasian Journal of Palaeontology*, **30**(1): 103–110.
- Morton, B.** 2007. The evolution of the watering pot shells (Bivalvia: Anomalodesmata: Clavagellidae and Penicillidae). *Records of the Western Australian Museum*, **24**(1): 19–64.
- Morton, B.** 2009. The watering pot shell *Dianadema minima* (Bivalvia, Anomalodesmata, Clavagellidae): re-description and an interpretation of adventitious crypt formation. *Invertebrate Biology*, **128**(3): 252–260.
- Morton, B. & Grebneff, A.** 2011. A new species and a new record of endobenthic Clavagellidae (Bivalvia: Anomalodesmata: Clavagelloidea) from the Oligocene and Miocene of New Zealand. *New Zealand Journal of Geology and Geophysics*, **54**(1): 125–134.
- d'Orbigny, A.** 1844–1858. *Paléontologie française. Description zoologique et géologique de tous les Animaux mollusques et rayonnés fossiles de France. Terrains crétacés*, vol. 3, 807 pp. Arthus Bertrand, Paris. [Published in parts. Family-group name Clavagellinae first used on page 299 (published 1845), see Bouchet & Rocroi, 2010, p. 161.]
- Pojeta, J., Jr. & Sohl, N.F.** 1987. *Ascaulocardium armatum* (Morton, 1833), new genus (Late Cretaceous): The ultimate variation on the bivalve paradigm. *Paleontological Memoirs*, **24**: 1–77.
- Pojeta, J., Jr. & Sohl, N.F.** 1988. Eocene clavagellids from Florida. *Journal of Paleontology*, **62**(5): 826.
- Savazzi, E.** 1982. Adaptations to tube dwelling in the Bivalvia. *Lethaia*, **15**(3): 275–297.
- Savazzi, E.** 2005. The function and evolution of lateral asymmetry in boring endolithic bivalves. *Paleontological Research*, **9**(2): 169–187.
- Smith, B.J.** 1976. Revision of the Recent species of the family Clavagellidae (Mollusca: Bivalvia). *Journal of the Malacological Society of Australia*, **3**(3–4): 187–207.
- Smith, L.A.** 1962. Revision of the Clavagellacea. *Veliger*, **4**(4): 167–174.
- Smith, L.A.** 1963. Historical Zoogeographic Study of the Clavagellacea. *Veliger*, **5**(1): 15–19.
- Stallwood, R.B.** 1995. A Turonian clavagellid (Bivalvia) from the Ladd Formation of Southern California. *Journal of Paleontology*, **69**(1): 84–88.
- Stoliczka, F.** 1870. Cretaceous fauna of Southern India, vol. 3. The Pelecypoda, with a review of all known Genera of this class, fossil and recent. *Palaeontologia Indica, being figures and descriptions of the organic remains procured during the progress of the Geological Survey of India*, (6)3(1–4): xxii, 1–8, 8α, 8β, 8δ, 9–222.
- Vokes, H.E.** 1967. Genera of the Bivalvia: A systematic and bibliographic catalogue. *Bulletins of American Paleontology*, **51**(232): [8], 111–394.

Vokes, H.E. 1980. *Genera of the Bivalvia. A Systematic and Bibliographic Catalogue (Revised and Updated)*. xxvii, 307 pp. Paleontological Research Institution, New York.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3541

**METINAE Simon, 1894 (Arachnida, Araneae, TETRAGNATHIDAE):
proposed emendation of the current spelling to METAINAE to remove
homonymy with METIDAE Boeck, 1872 (Crustacea, Copepoda)**

Fernando Álvarez-Padilla

*Universidad Nacional Autónoma de México, Facultad de Ciencias, Depto.
Biología Comparada, Lab. Acarología, Ciudad Universitaria, Ciudad de
México, Del. Coyoacan C.P. 04510 Mexico*
(e-mail: fap@ciencias.unam.mx)

Gustavo Hormiga

*The George Washington University, Department of Biological Sciences,
20203 G St. NW Washington D.C., 20050 U.S.A.*
(e-mail: hormiga@gwu.edu)

Abstract. The purpose of this application, under Articles 55.3.1 and 29 of the Code, is to remove homonymy between the family-group name METINAE Simon, 1894 currently used in Araneae (TETRAGNATHIDAE) and the crustacean family-group name METIDAE Boeck, 1872. It is proposed that the spelling of the spider name (based on the generic name *Meta* C.L. Koch, 1835) be emended to give METAINAE, while leaving the crustacean name (based on the generic name *Metis*) unaltered.

Keywords: Arachnida; Araneae; TETRAGNATHIDAE; Crustacea; Copepoda; METIDAE; *Meta*; *Metis*; *Meta menardi*; *Metis ignea*; crustaceans; spiders.

1. The family group name METEAE was proposed by Simon for a group of orb weaving spiders that he defined morphologically as ‘intermediate between *Tetragnatha* Latreille, 1804 and *Nephila* Leach, 1815’ (Simon, 1894, p. 726). The type genus for this family group name was *Meta* C.L. Koch, 1835 (pl. 12), with the type species *Epeira menardi* Latreille, 1804. Simon (1894) did not mention the etymology of this genus. However, several of Simon’s interpretations of names were later corrected by Thorell (1869) who considered *Meta* to be a Greek proper noun based on the name of the first wife of Aegeus, legendary King of Athens (Thorell, 1869, p. 35; Cameron in Ubick et al., 2005). Other uses of the family group name Meteae after Simon’s (1894) work were: Petrunkevitch’s *Systema Araneorum* published in 1928. This spider catalog ranked METEAE as the subfamily METINAE and included metine spiders within the former orb-weaver family ARGIOPIDAE (Petrunkevitch, 1928, p. 141). Roewer’s (1942) catalog followed the usage of METINAE, but considered it a subfamily within ARANEIDAE. Levi (1980) was the first to diagnose METINAE, revise the North American species and discuss its phylogenetic relationships with other araneoids. Platnick (1989) noted that the spider family name METINAE is invalid because it was preoccupied in the Copepoda. However, the name METINAE has been used by several authors in discussions of the taxonomy and phylogeny of these spiders (e.g. Heimer

& Nentwig, 1982; Brignoli, 1983; Levi 1986; Coddington, 1990; Hormiga et al., 1995; Griswold et al., 1998; Kuntner & Álvarez-Padilla, 2006; Álvarez-Padilla, 2007; Álvarez-Padilla et al., 2009). We have recently explained this homonymy problem and diagnosed the subfamily using the name METAINAE Simon, 1894 to avoid the homonymy (Álvarez-Padilla et al., 2009).

2. The crustacean family METIDAE was first proposed by Boeck (1872, p. 59) to include a group of Copepoda whose type genus is *Metis* Philippi, 1843 (p. 59), with the type species *Metis ignea* Philippi (p. 61). Homonymy of the two family group names arose because even though the generic names have different spellings, the names of their type genera have the same stem (*Met-*). The crustacean name METIDAE Boeck, 1872 has priority over METINAE Simon, 1894 (Article 23.1 of the Code). Unfortunately Philippi did not give the etymology of *Metis* (Philippi, 1843, p. 59) or specify the language of this word, but the name is probably derived from the Greek noun *mêtis*, meaning counsel, wisdom, skill or prudence. Its usual genitive is *metios*, so the stem would be *meti-* and a family name based on it METIIDAE, although there is a less used genitive (in lyric compositions), *metidos*, in which the stem is *metid-* and a family name based on it METIDIDAE. However, the original spelling METIDAE Boeck, 1872 seems to be uncontested as the spelling in prevailing usage, even if METIIDAE or METIDIDAE is the grammatically correct spelling. Therefore we suggest that the current spelling METIDAE for the crustacean family be maintained under Article 29.5 (Maintenance of current spellings of family-group names).

3. Reversal of precedence under Article 23.9.2 cannot be applied to this senior homonym because the name METIDAE Boeck, 1872 has been used more than 25 times after 1899 within Crustacea (Sars, 1910; Farran, 1913; Wilson, 1932; Guaita, 1961; Vervoort, 1964; Coull, 1977; Por, 1984; Gerber, 1987; Dahms, 1989; Meyer & Bell, 1989; Fiers, 1992; Damkaer, 1996; Suárez-Morales et al., 2006; Wells, 2007 and references therein). Therefore, the case is referred to the Commission under Article 55.3.1 of the Code.

4. We propose to emend the spelling of the family-group name METINAE Simon, 1894 to METAINAE to remove its homonymy with METIDAE Boeck, 1872.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that for the purposes of Article 29 of the Code the stem of the generic name *Meta* C.L. Koch, 1835 is *Meta-*;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Meta* C.L. Koch, 1835 (gender: feminine), type species *Epeira menardi* Latreille, 1804 by original designation;
 - (b) *Metis* Philippi, 1843 (gender: feminine), type species *Metis ignea* Philippi, 1843 by monotypy;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *menardi* Latreille, 1804, as published in the binomen *Epeira menardi* (specific name of the type species of *Meta* C.L. Koch, 1835);
 - (b) *ignea* Philippi, 1843, as published in the binomen *Metis ignea* (specific name of the type species of *Metis* Philippi, 1843);

- (4) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) METAINE Simon, 1894, type genus *Meta* C.L. Koch, 1835, spelling emended by the ruling in (1) above (Arachnida, Araneae);
 - (b) METIDAE Boeck, 1872, type genus *Metis* Philippi, 1843 (Crustacea, Copepoda);
- (5) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name METINE Simon, 1894 (Arachnida, Araneae), spelling emended to METAINE, as ruled in (1) above.

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References

- Álvarez-Padilla, F. 2007. Systematics of the spider genus *Metabus* O. P.-Cambridge, 1899 (Araneoidea: Tetragnathidae) with additions to the tetragnathid fauna of Chile and comments on the phylogeny of Tetragnathidae. *Zoological Journal of the Linnean Society*, **151**: 285–335.
- Álvarez-Padilla, F., Dimitrov, D., Giribet, G. & Hormiga, G. 2009. Phylogenetic relationships of the spider family Tetragnathidae (Araneae, Araneoidea) based on morphological and DNA sequence data. *Cladistics*, **29**: 109–146.
- Boeck, A. 1872. Nye Slaegter og Arter af Saltvands-Copepoder. *Forhandlinger i Videnskabs-Selskabet i Christiania*, **1872**: 35–60.
- Brignoli, P.M. 1983. *A catalogue of the Araneso described between 1940 and 1981*. 755 pp. Manchester University Press, Manchester.
- Cameron, H.D. 2005. An etymological dictionary of North American spider genus names. 274–330. In: Ubick, D., Paquin, P., Cushing, P.E. Roth, V. (Eds). *Spiders of North America: an identification manual*. American Arachnological Society. 377 pp.
- Coddington, J.A. 1990. Ontogeny and homology in the male palpus of orb-weaving spiders and their relatives, with comments on phylogeny (Araneoclada: Araneoidea, Deinopoidea). *Smithsonian Contributions to Zoology*, **496**: 1–52.
- Coull, B.C. 1977. Marine flora and fauna of the northeastern United States. Copepoda: Harpacticoida. NOAA Technical Report NMFS Circular 399. Pp. 1–48. Washington D.C.
- Dahms, H.U. 1989. First record of a lecithotrophic nauplius in Harpacticoida (Crustacea, Copepoda) collected from the Weddell Sea (Antarctica). *Polar Biology*, **10**: 221–224.
- Damkaer, D.M. 1996. Copepod taxonomy: Discovery vs. recognition. *Proceedings of the Biological Society of Washington*, **109**: 687–694.
- Farran, G.P. 1913. Marine Entomostraca. *Proceedings of the Royal Irish Academy*, **31**: 1–20.
- Fiers, F. 1992. *Metis reducta* n. sp. and *Laubieria tercera* n. sp. (Harpacticoida, Metidae) from the southern coast of Papua, New-Guinea. *Belgian Journal of Zoology*, **122**: 37–51.
- Gerber, P.A. 1987. Lagoon plankton of Enewetak Atoll. Pp. 203–217 In: *The Natural History of Enewetak Atoll. Volume 2. Biogeography and Systematics*, Devaney, D.M., Reese, E.S., Burch, B.L. & Helfrich, P. (Eds.), 348 pp. Office of Scientific & Technical Information US Department of Energy. U.S.A.
- Guaita, E. F. 1961. Catalogo de los Copepodos Planctonicos Chilenos. *Gayana*, **4**: 3–59.

- Griswold, C.E., Coddington, J.A., Hormiga, G. & Scharff, N. 1998. Phylogeny of the orb-web building spiders (Araneae, Orbiculariae: Deinopoidea, Araneoidea). *Zoological Journal of the Linnean Society*, **123**: 1–99.
- Heimer, S. & Nentwig, W. 1982. Thoughts on the phylogeny of the Araneoidea Latreille, 1806 (Arachnida, Araneae). *Zeitschrift für Zoologische Systematik Und Evolutionsforschung*, **20**: 284–295.
- Hormiga, G., Eberhard, W.G. & Coddington, J.A. 1995. Web-construction behaviour in Australian *Phonognatha* and the phylogeny of nephiline and tetragnathid spiders (Araneae: Tetragnathidae). *Australian Journal of Zoology*, **43**: 313–364.
- Koch, C.L. 1835. In Herrich-Schäffer, G.W. *Favnae insectorum Germanicae initia*. Arachniden. Heft 128, folio 8–16, 23–24; Heft 129, folio 12–24; Heft 130, folio 13–14; Heft 131, folio 1–24; Heft 134, folio 1–24. Regensburg.
- Kuntner, M. & Álvarez-Padilla, F. 2006. Systematics of the Afro-Macaronesian spider genus *Sancus* (Araneae, Tetragnathidae). *Journal of Arachnology*, **34**: 113–125.
- Levi, H.W. 1980. The orb-weaver genus *Mecynogea*, the subfamily Metinae and the genera *Pachygnatha*, *Glenognatha* and *Azilia* of the subfamily Tetragnathinae north of Mexico (Araneae: Araneidae). *Bulletin of the Museum of Comparative Zoology*, **149**: 1–74.
- Levi, H.W. 1986. The Neotropical orb-weaver genera *Chrysometa* and *Homalometa* (Araneae: Tetragnathidae). *Bulletin of the Museum of Comparative Zoology*, **151**: 91–215.
- Meyer, H.A. & Bell, S.S. 1989. Mouth parts of the Marine Harpacticoid Copepod *Metis holothuriae*. *Transaction of the American Microscopy Society*, **108**: 414–418.
- Pesta, O. 1920. Die Plancetoncopepoden der Adria. *Zoologischen Jahrbüchern. Abt. f. Systematik*, **43**: 471–660.
- Petrunkewitch, A. 1928. *Systema Araneorum*. *Transactions of the Connecticut Academy of Arts and Sciences*, **29**: 1–270.
- Philippi, A. 1843. Fernere Beobachtungen über die Copepoden des Mittelmeeres. *Archiv für Naturgeschichte*, **9**: 54 – 71.
- Platnick, N.I. 1989. *Advances in Spider Taxonomy 1981–1987. A Supplement to Brignoli's A Catalogue of the Araneae described between 1940 and 1981*. 673 pp. Manchester University Press, Manchester.
- Platnick, N.I. 2010. The World Spider Catalog, Version 11. The American Museum of Natural History. Available at <http://research.amnh.org/entomology/spiders/catalog> (Accessed on 14 March 2011).
- Por, F.D. 1984. Crustaceana. Canuellidae Lang (Harpacticoida, Polyarthra) and the ancestry of the Copepoda in Vervoort, W. (ed.). *Studies on Copepoda II. Proceedings of the First International Conference on Copepoda*. Amsterdam, The Netherlands, 24–28 August 1981. Crustaceana, Supplement, **7**: 1–24.
- Roewer, C.F. 1942. *Katalog der Araneae von 1758 bis 1940 1 Band*. 1040 pp. Kommissions-Verlag von 'Natura', Bremen, Bruxelles.
- Roewer, C.F. 1954. *Katalog der Araneae von 1758 bis 1940, bzw. 1954 2 Band, Art. b*. 924 pp. Rue Vautier, Bruxelles.
- Simon, E. 1894. *Historie naturelle des araignées 1*. 1084 pp. Librairie encyclopédique de Roret, Paris.
- Sars, G.O. (1910). Copepoda Harpacticoida. Parts XXIX & XXX. Tachidiidae (concluded), Metidae, Balaenophilidae, supplement (part). An Account of the Crustacea of Norway, with short descriptions and figures of all the species, vol. 5. Pp. 337–368, pls. 225–230, suppl. pls. 1–10. 342 pp. Bergen Museum, Bergen.
- Suárez-Morales, E., Troch, M.D. & Fiers, F. 2006. A checklist of the marine Harpacticoida (Copepoda) of the Caribbean Sea. *Zootaxa*, **1285**: 1–19.
- Thorell, T. 1869. On European spiders. Part I. Review of the European genera of spiders, preceded by some observations on zoological nomenclature. *Nova acta Regiae societatis scientiarum upsaliensis*, **7**: 1–108.
- Vervoort, W. 1964. Free-Living Copepoda From Ifaluk Atoll in the Caroline Islands With Notes on Related Species. *Bulletin of the United States Museum*, **263**: 1–431.
- Wells, J.B.J. 2007. An annotated checklist and keys to the species of Copepoda Harpacticoida (Crustacea). *Zootaxa*, **1568**: 1–872.

Wilson, C.B. 1932. The Copepods of the Woods Hole Region Massachusetts. *Bulletin of the United States Museum*, **158**: 1–635.

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Case 3570

***Curculio scirpi* Fabricius, 1792 (currently *Notaris scirpi*; Insecta, Coleoptera, CURCULIONOIDEA, ERIRHINIDAE): proposed precedence over *Curculio rhamni* Herbst, 1784 and *C. scirpi* Rossi, 1790**

Roberto Caldara

via Lorenteggio 37, 20146 Milano, Italy
(e-mail: roberto.caldara@gmail.com)

Herbert Winkelmann

Attendorner Weg 39 A, 13507 Berlin, Germany
(e-mail: hyperiniwinkelmann@web.de)

Miguel A. Alonso-Zarazaga

Departamento de Biodiversidad y Biología Evolutiva, Museo Nacional de Ciencias Naturales (CSIC), José Gutiérrez Abascal, 2, E-28006 Madrid, Spain (e-mail: zarazaga@mncn.csic.es)

Abstract. The purpose of this application, under Articles 23.9.3, 81.2.1 and 81.2.3 of the Code, is to conserve the name *Curculio scirpi* Fabricius, 1792, a common Palaearctic weevil species currently belonging to the genus *Notaris* (CURCULIONOIDEA, ERIRHINIDAE) by giving it precedence over the little-used older name *C. rhamni* Herbst, 1784 whenever these names are considered to be synonyms, and by suppressing the little-used senior homonym *C. scirpi* Rossi, 1790.

Keywords. Nomenclature; taxonomy; Coleoptera; CURCULIONOIDEA; ERIRHINIDAE; *Curculio*; *Notaris*; *Notaris scirpi*; *Notaris rhamni*; *Curculio scirpi*; weevil; Palaearctic.

1. Herbst (1784, p. 78) described a new species of ERIRHINIDAE (formerly CURCULIONIDAE) from Reppen (now Rzepin in western Poland) as *Curculio rhamni*. Subsequently (Herbst, 1795, p. 280) he redescribed this species accompanied by a drawing and specifying that it was already described previously. This taxon was first synonymised with *Erirhinus scirpi* (Fabricius, 1792) (formerly *Curculio*, presently *Notaris*) by Gyllenhal (1835, p. 284) without comment. Klima (1934, p. 37) cited *C. rhamni* Herbst, 1784 as a doubtful synonym along with *Notaris scirpi* and *C. rhamni* sensu Herbst, 1795 as a synonym of *Notaris bimaculatus* (Fabricius, 1787) (presently *Tournotaris* Alonso-Zarazaga & Lyal, 1999). Recently in their checklist of the weevils from the Kemerovo Province (southern Siberia) and the Coleoptera from Latvia respectively, Krivets & Legalov (2002, p. 820) and Telnov (2004, p. 105) quoted *Notaris rhamni* (Herbst, 1795) as a valid species, the latter placing *scirpi* (Fabricius, 1787 [sic] nec Rossi, 1790) in synonymy with *rhamni*. Telnov (pers. comm.) stated that ‘reporting *Notaris rhamni* (Herbst, 1795) in this catalogue was a mistake and does not have any nomenclatural background’.

2. Since the type material of *C. rhamni* was not traced, recently Caldara & Winkelmann (2010) designated a neotype for this taxon following the original description and the drawing reported in Herbst's (1795) redescription and in accordance with Article 75 of the Code. They proposed the synonymy of this species with *Notaris scirpi* (Fabricius, 1792) (formerly *Curculio*).

3. Rossi (1790, p. 118) described *Curculio scirpi* based on specimens collected in "Etruria" (presently an area of central Italy including Tuscany and part of Umbria and Latium). Since then this taxon has never been listed in papers or catalogues except for Telnov (2004). No type specimens of *Curculio scirpi* Rossi are available at the Museum für Naturkunde der Humboldt-Universität of Berlin (ex coll. J.C.L. Hellwig), where part of Rossi's collection is housed. However, Rossi's description agrees well with the modern concept of *N. scirpi* (Fabricius, 1792) (Hoffmann, 1958; Dieckmann, 1986; Smreczyński, 1972). Therefore, following all the qualifying conditions of Article 75.3 of the Code, with the express purpose of clarifying the taxonomic status of this taxon, clearly differentiated from other closely related species by characters reported by Hoffmann (1958), Smreczyński (1972) and Dieckmann (1986), we decided to designate a specimen bearing these characters as the neotype of *C. scirpi* Rossi. This is a male specimen labelled as follows: 'palude di Fucecchio, 19-11-967, L. Failla [handwritten] / Ex-coll. Failla [printed] / NEOTYPE, *Curculio scirpi* Rossi, 1790, des. Caldara & Winkelmann 2011 [red card, printed] / *Notaris scirpi* (Fabricius), det. Caldara & Winkelmann 2011 [printed]'. The specimen is 5.5 mm long (rostrum excluded), well preserved and set on a white rectangular card. It is deposited at the Museum of Natural History of Florence. The neotype locality of *C. scirpi* Rossi (originally 'Etruria') is Palude di Fucecchio (Pistoia, Tuscany, Italy). The following synonymy is here proposed: *Notaris scirpi* (Fabricius, 1792) = *Curculio scirpi* Rossi, 1790 n. syn.

4. *Notaris scirpi* (Fabricius, 1792) (formerly *Curculio*) is a common weevil species which has been cited under this name and this author repeatedly over the past 50 years (Abbazzi & Maggini, 2009; Abbazzi & Osella, 1992; Abbazzi et al., 1994; Alonso-Zarazaga, 2002; Alonso-Zarazaga et al., 2006; Angelini, 1987; 1998; Angelini & Montemurro, 1986; Bercio & Folwaczny, 1979; Caldara & O'Brien, 1995; Casalini & Colonnelli, 2001; Colonnelli, 2003; Dieckmann, 1986; Endrödi, 1970; Hansen M., 1996; Hansen V., 1964; Lohse, 1983; Morris, 2002; Pelletier, 2005, Pešić, 2004; Silfverberg, 1979; Smreczyński, 1972; Tempère & Péricart, 1989; Thompson, 2006; Wanat & Moczyski, 2005). Because of Krivets & Legalov's citation of *Notaris rhamni* (Herbst) and Telnov's (2004) citation of *Notaris rhamni* (Herbst) and *N. scirpi* (Rossi), the junior name *scirpi* Fabricius cannot be maintained under the Code, despite being in prevailing usage according to Article 23.9.1.2 of the Code (1999), as the conditions of Article 23.9.1.1 are not met. We also believe that the use of the senior primary homonym *scirpi* Rossi, 1790 would be undesirable and would cause nomenclatural confusion.

5. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to give the specific name *scirpi* Fabricius, 1792, as published in the binomen *Curculio scirpi*, precedence over the name *rhamni* Herbst, 1784, as published in the binomen *Curculio rhamni*, whenever the two names are considered to be synonyms;

- (b) to suppress the specific name *scirpi* Rossi, 1790, as published in the binomen *Curculio scirpi*, for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *scirpi* Fabricius, 1792, as published in the binomen *Curculio scirpi*, with the endorsement that it is to be given precedence over the name *ramni* Herbst, 1784, as published in the binomen *Curculio ramni*, whenever the two names are considered to be synonyms;
 - (b) *ramni* Herbst, 1784, as published in the binomen *Curculio ramni*, with the endorsement that it is not to be given priority over the name *scirpi* Fabricius, 1792, as published in the binomen *Curculio scirpi*, whenever the two names are considered to be synonyms;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *scirpi* Rossi, 1790, as published in the binomen *Curculio scirpi* and as suppressed in (1)(b) above.

References

- Abbazzi, P. & Maggini, L. 2009. Elenco sistematico-faunistico dei Curculionoidea italiani, Scolytidae e Platypodae esclusi (Insecta, Coleoptera). *Aldrovandia*, **5**: 29–216.
- Abbazzi, P. & Osella, G. 1992. Elenco sistematico-faunistico degli Anthribidae, Rhinomaceridae, Attelabidae, Apionidae, Brentidae, Curculionidae Italiani (Insecta, Coleoptera, Curculionoidea). I Parte. *Redia*, **75**: 267–414.
- Abbazzi, P., Colonnelli, E., Masutti, L. & Osella, G. 1994. Coleoptera Polyphaga XVI (Curculionoidea). In Minelli, A., Ruffo, S. & La Posta, S. (Eds.), *Checklist delle specie della fauna italiana, Fasc. 61. Calderini*. 68 pp. Bologna.
- Alonso-Zarazaga, M.A. 2002. Lista preliminar de los Coleoptera Curculionoidea del área Ibero-Balear, con descripción de *Melicius* gen. nov. y nuevas citas. *Boletín de la Sociedad Entomológica Aragonesa*, **31**: 9–33.
- Alonso-Zarazaga, M.A. & Lyal, C.H.C. 1999. *A World Catalogue of Families and Genera of Curculionoidea (Insecta: Coleoptera) (Excepting Scolytidae and Platypodidae)*. 315 pp. Entomopraxis, S.C.P. Edition, Barcelona.
- Alonso-Zarazaga, M.A., Sánchez-Ruiz, M. & Domingo-Quero, T. 2006. Lista preliminar de los Curculionoidea (Coleoptera) de la Comunidad de Madrid (España) *Graelsia*, **62** (número extraordinario): 43–52.
- Angelini, F. 1987. Coleotterofauna del promontorio del Gargano (Coleoptera). *Atti del Museo Civico di Storia Naturale di Grosseto*, **11/12**: 5–84.
- Angelini, F. 1998. Coleotterofauna reperita mediante trappola luminosa in due stazioni umide della Basilicata (Italia meridionale) (Coleoptera). *Quaderni della Stazione Ecologica del Civico Museo di Storia Naturale di Ferrara*, **11**: 7–37.
- Angelini, F. & Montemurro, F. 1986. Coleotterofauna del boscodi Policoro (Matera) (Coleoptera). *Biogeographia, Nuova Serie*, **10**(1984): 545–604.
- Bercio, H. & Folwaczny, B. 1979. *Verzeichnis der Käfer Preußens*. 369 pp. Parzeller & Co, Fulda.
- Caldara, R. & O'Brien, C.W. 1995. Curculionidae: aquatic weevils of China (Coleoptera). Pp. 389–408 in Jäch, M.A. & Ji, L. (Eds.), *Water Beetles of China*. vol I. Zoologisch-Botanische Gesellschaft (Section of Entomology) und Wiener Coleopterologenverein, Vienna.
- Caldara, R. & Winkelmann, H. 2010. Notes on weevil species described by Herbst (Erirhinidae, Coleoptera, Curculionoidea). *Deutsche Entomologische Zeitschrift*, **57**(1): 99–103.
- Casalini, R. & Colonnelli, E. 2001. I Curculionoidei della tenuta presidenziale di Castelporziano (Coleoptera, Curculionoidea). *Bollettino dell'Associazione Romana di Entomologia*, **56**: 331–352.
- Colonnelli, E. 2003. A revised checklist of Italian Curculionoidea (Coleoptera). *Zootaxa*, **337**: 1–142.

- Dieckmann, L.** 1986. Beiträge zur Insektenfauna der DDR: Coleoptera-Curculionidae (Erirhinae [sic]). *Beiträge zur Entomologie*, **36**: 119–181.
- Endrödi, S.** 1970. Fundortsangaben über die Rüsselkäfer (Col. Curculionidae) des Karpatenbeckens. V. *Folia Entomologica Hungarica* (series nova), **23**: 349–400.
- Fabricius, J.C.** 1787. *Mantissa Insectorum, sistens eorum species nuper detectas: adjectis characteribus genericis, differentiis specificis, emendationibus, observationibus*, vol. 1. xx, 348 pp. Christ. Gottl. Proft., Hafniae.
- Fabricius, J.C.** 1792. *Entomologia systematica emendata et aucta. Secundum classes, ordines, genera, species adjectis synonymis, locis, observationibus, descriptionibus*, vol. 1(2). 538 pp. C.G. Proft, Hafniae.
- Gyllenhal, L.** 1835. In Schoenherr, C.J., *Genera et species curculionidum, cum synonymia hujus familiae. Species novae aut hactenus minus cognitae, descriptionibus a Dom. Leonardo Gyllenhal, C. H. Boheman, et entomologis aliis illustratae*, vol. 3(1). 505 pp. [1836]. Roret, Paris.
- Hansen, M.** 1996. Katalog over Danmarks biller (Catalogue of the Coleoptera of Denmark). *Entomologiske Meddelelser*, **64**: 1–231.
- Hansen, V.** 1964. Fortegnelse over Danmarks biller (Coleoptera). *Entomologiske Meddelelser*, **33**: 1–507.
- Herbst, J.F.W.** 1784. Kritisches Verzeichniss meiner Insektensammlung. [Cont.]. *Archiv der Insectengeschichte*, **5**(1): 73–128, pls. 25–28 (suppl.).
- Herbst, J.F.W.** 1795. *Natursystem aller bekannten in- und ausländischen Insekten, als eine Fortsetzung der von Buffonschen Naturgeschichte. Fortgesetzt von Johann Friedrich Wilhelm Herbst. Der Käfer*, vol. 6. 520, XXIV pp. Berlin, J. Pauli.
- Hoffmann, A.** 1958. Coléoptères Curculionides (Troisième partie). *Faune de France*, vol. 62. Pp. 1208–1839. Lechevalier, Paris.
- Klima, A.** 1934. *Coleopterorum Catalogus auspiciis et auxilio W. Junk editus a S. Schenkling. Pars 140. Curculionidae: Erirrhinae*. 167 pp. Junk, 's-Gravenhage.
- Krivets, S.A. & Legalov, A.A.** 2002. Obzor žukov nadsem. Curculionoidea (Coleoptera) fauny Kemerovskoj oblasti. *Entomologicheskoe Obozrenie*, **81**(2): 817–833.
- Lohse, G.A.** 1983. Notarinae (Erirhinae [sic]). Pp. 59–78 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas*, Band 11. 324 pp. Krefeld, Goecke & Evers.
- Morris, M.G.** 2002. *True Weevils (Part I): Family Curculionidae, subfamilies Raymondionyminae to Smicronychinae*, vol. 5, part 17b. 149 pp. The Royal Entomological Society of London, London.
- Pelletier, J.** 2005. Catalogue de Curculionoidea de France (Coleoptera). *Biocosme Mésogéen, Nice*, **21** [2004]: 75–147.
- Pešić, S.** 2004. Weevils fauna (Coleoptera: Curculionoidea) of Gruža Reservoir, Central Serbia. *Kragujevac Journal of Science*, **26**: 115–130.
- Rossi, P.** 1790. *Fauna Etrusca sistens insecta quae in provinciis Florentina et Pisana praesertim collegit Petrus Rossius*. Tomus secundus. 348 pp, Liburni, Masi.
- Silfverberg, H.** 1979. *Enumeratio Coleopterorum Fennoscandiae et Daniae*. 79 pp. Elsingfors Entomologiska Bytesförening, Helsinki.
- Smreczyński, S.** 1972. *Ryikowce – Curculionidae: Podrozina Curculioninae*, vol. 77 (XIX, 98d). 195 pp. Klucze do Oznaczenia Owadów Polski, Warszawa.
- Telnov, D.** 2004. *Compendium of Latvian Coleoptera. Check-list of Latvian beetles (Insecta Coleoptera)*. 115 pp. Entomological Society of Latvia, Riga.
- Tempère, G. & Péricart, J.** 1989. Coléoptères Curculionides. Quatrième partie: complements. In: *Faune de France*, vol. 74. 534 pp. Lechevalier, Paris.
- Thompson, R.T.** 2006. A revision of the weevil genus *Procas* Stephens (Coleoptera: Curculionoidea: Erirhinidae). *Zootaxa*, **1234**: 1–63.
- Wanat, M. & Moczyski, T.** 2005. A new checklist of the weevils of Poland (Coleoptera: Curculionoidea). *Genus*, **16**: 69–117.

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Case 3571

***Crotalinus catenatus* Rafinesque, 1818 (currently *Sistrurus catenatus*) and *Crotalus tergeminus* Say in James, 1822 (currently *Sistrurus tergeminus*; Reptilia, Serpentes): proposed conservation of usage by designation of neotypes for both species**

Brian I. Crother

Department of Biology, Southeastern Louisiana University, Hammond, LA 70402, U.S.A. (e-mail: bcrother@selu.edu)

Jay M. Savage

Department of Biology, San Diego State University, San Diego, CA 92182, U.S.A. (e-mail: savyl@cox.net)

Andrew T. Holycross

Mesa Community College, Red Mountain Campus, Mesa, AZ, 85207 U.S.A. & School of Life Sciences, Arizona State University, Tempe, AZ 85287, U.S.A. (e-mail: andrewholycross@gmail.com)

Abstract. The purpose of this application, under Articles 78.1, 78.2.3 and 81 of the Code, is to conserve the long and continuing usage of the specific name *Crotalinus catenatus* Rafinesque, 1818 (currently *Sistrurus catenatus*) for a species of pygmy rattlesnake by designation of a neotype. In addition, in order to will conserve the nearly equally long and continuous usage of the name *Crotalus tergeminus* Say in James, 1822 (currently *Sistrurus tergeminus* or *Sistrurus catenatus tergeminus*) for another pygmy rattlesnake, the Commission is asked to designate a neotype for this nominal species also. Newly found evidence indicates that the name *Crotalinus catenatus* was based on a specimen of *C. tergeminus*, and to conserve the names of both nominal taxa designation of neotypes for each is required.

Keywords. Nomenclature; taxonomy; Reptilia; Serpentes; *Sistrurus*; *Sistrurus catenatus*; *Sistrurus tergeminus*; rattlesnakes; North America.

1. Rafinesque (1818, p. 41) briefly described a new species of rattlesnake as *Crotalinus catenatus* from ‘the prairies of the Upper Missouri’ in the Louisiana Purchase of the United States. The name was based on a single specimen collected by John Bradbury on the Wilson P. Hunt Expedition to the Pacific Coast. This name has been used continuously since 1895 in the combination *Sistrurus catenatus* for a species of pygmy rattlesnake. In addition, the name has been used from 1936 to date for the subspecies *Sistrurus catenatus catenatus*, which ranges east of the Mississippi River (Kubatko et al., 2011, p. 3).

2. Say in James (1822, p. 499) subsequently described *Crotalus tergeminus* based on two pygmy rattlesnakes collected from an indefinite locality during the Long

Expedition to the Rocky Mountains in the western United States. This name has been continuously used in the combination *Sistrurus tergeminus* or *S. catenatus tergeminus* since Garman ('1883', 1884, pp. 118, 176) for a taxon found west of the Mississippi River (Kubatko et al., p. 3). The James account is often cited as appearing in 1823 but Woodman (2010, p. 28) has demonstrated that it was offered for sale in late December, 1822.

3. Recently, Holycross et al. (2008, p. 422) presented evidence from Bradbury's (1817, p. 70) account of his travels that the holotype of *Crotalinus catenatus* was collected on April 25, 1811, not on the prairies of the Upper Missouri but on the floodplain of the Missouri River between the mouth of the Platte River and modern-day Nebraska City, Nebraska, U.S.A. In fact there was a confusion of locality data for this snake and another (*Crotalinus viridis* Rafinesque, 1811) collected by Bradbury (1817, p. 147) and described from a single specimen that was stated by Rafinesque (1811, p. 41) to have been from the 'Upper Missouri.' Holycross et al. (2008, p. 422) provided evidence that the second snake was actually collected in what is modern-day North Dakota. These authors further demonstrated that the type locality of what is called *Crotalinus catenatus* is within the range of *Sistrurus catenatus tergeminus* and not that of the form usually called *S. c. catenatus*. Under the Principle of Priority (Article 23 of the Code), this makes *Crotalinus catenatus* a name that cannot be applied to the eastern taxon because it is a senior synonym of *Crotalus tergeminus*. While there can be no question regarding the identity of the holotype and the type locality of *Crotalinus catenatus*, that specimen is no longer extant (Holycross, 2008, p. 422).

4. The situation is complicated by the lack of agreement concerning the provenance of the syntypes of *Crotalus tergeminus*. It has been variously cited as indefinite (Minton, 1983, p. 1; Gloyd, 1955, p. 92); between the Mississippi River and the Rocky Mountains (Klauber, 1956, p. 50; McDiarmid et al. 1999, p. 325; Campbell and Lamar, 2004, p. 609); between Plateville, Weld County, and just south of Brighton, Adams County, northeastern Colorado [northeast of present day Denver] (Dundee, '1996', 1997, p. 81); or possibly along the Boyer River, in Harrison County, Iowa (Dundee, '1996', 1997, p. 8). To further complicate matters, there have been two arbitrary restrictions of the type locality, by Smith and Taylor (1950, p. 358) to Winfield, Cowley County, Kansas and by Schmidt (1953, p. 226) to the headwaters of the Arkansas River. The syntypes of *Crotalus tergeminus* no longer exist. They appear to have been part of the Charles Willson Peale Museum (the Philadelphia Museum) collection, which was sold to P.T. Barnum in 1849. They were almost certainly incinerated in the 1851 fire that destroyed Barnum's Museum (Stroud, 1992, p. 287).

5. If the name *catenatus* were to be applied to the western population the first available name for the eastern taxon is *Crotalus messasaugus* Kirtland, 1838, no type locality stated but certainly from the state of Ohio where Kirtland resided. Adler (1963) suggested that a National Museum of Natural History, U.S.A. specimen (USNM 526) collected from Mahoning County, Ohio by Kirtland might be the holotype of this taxon. The name *messasaugus* has not been used as a valid name in any publication post-1899 and its use would upset stability by replacing *Sistrurus catenatus*.

6. Kubatko et al. (2011, p. 13), apparently unfamiliar with the paper by Holycross et al. (2008), suggested on the basis of a phylogenetic analysis that *Sistrurus catenatus* and *Sistrurus tergeminus* be recognized as separate species.

7. Inasmuch as the names *Sistrurus catenatus* or *S. c. catenatus* and *Sistrurus tergeminus* or *S. c. tergeminus* have appeared in approximately 1400 works by at least 250 authors since 1895 (Zoological Record 1895–2007), universality and stability seem best served through action of the Commission to use its plenary power (Article 81 of the Code) to preserve prevailing usage by designating neotypes of known provenance for the two taxa in question. The standard procedures of the Code (Article 75) for neotype designation cannot be applied in this case because of the constraint that any specimen selected to bear the name *Crotalinus catenatus* should come from or near the original type locality (Article 75.3.6), which in that event would lie within the geographic range of the taxon currently recognized as *Sistrurus catenatus tergeminus*. In the case of *Crotalus tergeminus* it is not possible to ascertain which of the several options might be the type locality. Therefore, it seems logical to select a neotype from a definite locality near the route of the Long Expedition's return to the east from the Rocky Mountains down the course of the Arkansas River where *Sistrurus catenatus tergeminus* is definitely known to occur. The latter action could be accomplished in a separate publication as it does not require the action of the Commission. However, under Article 78.2.3 of the Code, the Commission is empowered to apply the provisions of the Code and issue an Opinion on any question of zoological nomenclature, and we believe it would be most parsimonious for the Commission to select neotypes for the two involved taxa at the same time.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to designate specimen USNM 526 at the National Museum of Natural History, U.S.A. from Poland, Mahoning County, Ohio, U.S.A. as the neotype of *Crotalinus catenatus* Rafinesque, 1816;
- (2) to use its specific powers to designate specimen USNM 86472 at the National Museum of Natural History, U.S.A., from Winfield, Cowley, Kansas, U.S.A. as the neotype of *Crotalus tergeminus* Say in James, 1822;
- (3) to place on the Official List of Specific Names in Zoology the name *catenatus* as published in the binomen *Crotalinus catenatus* Rafinesque, 1811, and as defined by the neotype designated in (1)(a) above;
- (4) to place on the Official List of Specific Names in Zoology the name *tergeminus* as published in the binomen *Crotalus tergeminus* Say in James, 1822 and as defined by the neotype designated in (1)(b) above.

References

- Adler, K.K. 1963. The type locality of *Crotalus messasaugus* Kirtland. *Journal of the Ohio Herpetological Society*, 4(1–2): 55–57.
- Bradbury, J. 1817. *Travels in the interior of America, in the years 1809, 1810, and 1811; including a description of upper Louisiana together with the states of Ohio, Kentucky, Indiana, and Tennessee, with the Illinois and western territories and containing remarks and observations useful to persons emigrating to those countries*. xii, 364 pp. Sherwood, Neely & Jones, London.
- Campbell, J.A. & Lamar, W.W. 2004. *The venomous reptiles of the Western Hemisphere*, vol. 2. xiv, 477–870 pp. [28], 614 pls. Comstock Pub. Associates, Ithaca [N.Y.].

- Dundee, H.A.** '1996', 1997. Some reallocations of type localities of reptiles and amphibians described from the Major Stephen H. Long expedition to the Rocky Mountains, with comments on some of the statements made in the account written by Edwin James. *Tulane Studies in Zoology and Botany*, **30**(2): 75–89.
- Garman, S.** '1883', 1884. The reptiles and batrachians of North America. *Memoirs of the Museum of Comparative Zoology*, **8**(3): 1–185.
- Gloyd, H.K.** 1955. A review of the massasaugas, *Sistrurus catenatus*, of the southwestern United States. *Bulletin of the Chicago Academy of Sciences*, **10**(6): 83–98.
- Holycross, A.T., Anton, T.G. Douglas, M.E. & Frost, D.R.** 2008. The type localities of *Sistrurus catenatus* and *Crotalus viridis* (Serpentes: Viperidae), with the unraveling of a most unfortunate tangle of names. *Copeia*, **2008**(2): 421–424.
- James, E.** (compiler) 1822. *Account of an expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and '20, by order of the Hon. J. C. Calhoun, Sec'y of War: under the command of Major Stephen H. Long. From the notes of Major Long, Mr. T. Say, and other gentlemen of the exploring party.* vol. 1. [iii], 502 pp. H.C. Carey & I. Lea, Philadelphia.
- Klauber, L.M.** 1956. *Rattlesnakes: Their habits, life histories, and influence on mankind*, vol. 1. xxix, 708 pp. University of California Press, Berkeley.
- Kirtland, J.P.** 1838. Report on the zoology of Ohio. Pp. 159–200 in Second Annual Report on the Geological Survey of the state of Ohio. Columbus, Ohio.
- Kubatko, L.S., Gibbs, H.L. & Bloomquist, E.W.** 2011. Inferring species-level phylogenies and taxonomic distinctiveness using multilocus data in *Sistrurus* rattlesnakes. *Systematic Biology*, **60**(4): 393–409.
- McDiarmid, R.W., Campbell, J.A. & Touré, T.A.** 1999. *Snakes species of the world: A taxonomic and geographic reference.* xi, 511 pp. Herpetologists' League, Washington, D.C.
- Minton, S.A.** 1983. *Sistrurus catenatus* (Rafinesque). Massasauga. *Catalogue of American Amphibians and Reptiles*, 332.1–332.2.
- Rafinesque, C.S.** 1818. Farther account of discoveries in natural history, in the western states. *American Monthly Magazine and Critical Review*, **4**: 39–42.
- Schmidt, K.P.** 1953. *A check list of North American amphibians and reptiles.* 280 pp. University of Chicago Press, Chicago.
- Smith, H.M. & Taylor, E.H.** 1950. Type localities of Mexican reptiles and amphibians. *University of Kansas Science Bulletin*, **33** (8): 313–380
- Stroud, P.T.** 1992. *Thomas Say: New World naturalist.* xv, 340 pp. 9 pls. University of Pennsylvania Press, Philadelphia.
- Woodman, N.** 2010. History and dating of the publication of the Philadelphia (1822) and London (1823) editions of the Edwin James's *Account of an expedition from Pittsburgh to the Rocky Mountains*. *Archives of Natural History*, **37**(1): 28–38.

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Case 3563***Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE): proposed conservation of the generic name**

Jelle Zijlstra

Rijnzichtweg 153, 2342 AZ Oegstgeest, The Netherlands
(e-mail: jelle.zijlstra@college.harvard.edu)

Colin Groves

School of Archaeology & Anthropology, Building 14, Australian National University, Canberra, ACT 0200, Australia
(e-mail: Colin.Groves@anu.edu.au)

Alex Dunkel

7305 Calibre Park Dr. #102, Durham, NC, U.S.A.
(e-mail: visionholder@gmail.com)

Abstract. The purpose of this application, under Articles 23.9.3, 81.1 and 81.2.3 of the Code, is to conserve the name *Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE), a genus of subfossil Malagasy lemurs, by suppressing the senior subjective synonym *Palaeochirogalus* Grandidier, 1899 and by designating a type species for the genus *Pachylemur* Lamberton. *Palaeochirogalus* Grandidier has never seen any substantial usage whereas *Pachylemur* Lamberton, 1948 is in universal use; however, *Pachylemur* Lamberton, 1948 is unavailable because no type species was designated in the original publication. Filhol (1874) previously used the name *Pachylemur* for a ‘groupe’ of Paleogene primates; we conclude that this name, under either Filhol’s or Palmer’s (1904) authorship and, in either case, ambiguous as regards availability should be formally suppressed at the genus-group level to prevent confusion.

Keywords. Nomenclature; taxonomy; LEMURIDAE; *Palaeochirogalus*; *Pachylemur*; *Pachylemur insignis*; lemur; Madagascar.

1. Filhol (1874, p. 18) introduced the name *Pachylemur* for a group of ancient primate-like mammals: ‘Ce groupe, je proposerai de le désigner sous le nom de *Pachylemur*, et j’y placerai le *Palæolemur Bettilei*, l’*Adapis*, l’*Aphelotherium*, l’animal dont je viens de donner la description et les divers Lémuriens signalés jusqu’ici en Amérique’. He called *Pachylemur* a ‘groupe’ (group) and ‘type zoologique’ (zoological type) and explicitly included genera (‘genres’) within the ‘groupe’ (also Filhol, 1874, p. 18; outside the passage quoted above). Thus he apparently did not intend *Pachylemur* as a generic name; the possibility remains, however, that it could be construed as a generic name proposed for a series of taxa at subgeneric level. If *Pachylemur* Filhol, 1874 is construed as a family-group name, it is unavailable in the absence of an available type genus and because it is not a noun in the nominative plural (Article 11.7.1.1 of the Code).

2. Miall (1875, p. 267), in a *Geological Record* summary of Filhol's paper, wrote that Filhol had ' [p]ropose[d] a new group, *Pachylemuridæ*'. Under Article 11.7.1.1 of the Code, the name PACHYLEMURIDAE Miall, 1875 is apparently unavailable because it was not based on an available generic name and the type genus was not 'a name then used as valid in the new family-group taxon'. However, although Miall (1875) clearly considered it to have been proposed for a taxon in the family-group, if *Pachylemur* Filhol, 1874 were to be regarded as an available generic name, then under Article 11.7.1.1 of the Code, the name PACHYLEMURIDAE Miall, 1875 may also be available. Although this family name is not in current use under any authorship, its ambiguous status may at some time become destabilizing.

3. Gervais (1876, p. 36) transferred the species *Adapis magnus* Filhol, 1874 (p. 18) to a new genus. He considered using the name *Pachylemur* Filhol for this genus, but rejected it and proposed the new name *Leptadapis* instead. Under Article 11.5, *Pachylemur* Gervais, 1876 is unavailable because it was not used as a valid name.

4. Palmer (1904, p. 494), in his *Index generum mammalium*, listed '*Pachylemur* Gervais, 1876', and wrote that Filhol (1874) had used *Pachylemur* as a family. On p. 890, he listed the type of *Pachylemur* as *Adapis magnus* Filhol, but provided a cross-reference to *Leptadapis*. As Palmer (1904, p. 10) indicated, his work lists both synonyms and valid names without distinguishing them, so the presence of *Pachylemur* in his index does not constitute evidence that he used the name as valid. Palmer (1904, p. 785) wrote that he had included cross-references with at least some synonyms listed in Part III of his work; thus, the cross-reference to *Leptadapis* on p. 890 (in Part III) further suggests that he did not use *Pachylemur* as valid. If not, *Pachylemur* Palmer, 1904 is unavailable under Article 11.5 of the Code; however, the evidence is ambiguous, and a ruling by the Commission on its unavailability is desired. Palmer (1904, pp. 760, 890) also listed the family-group name PACHYLEMURIDAE, but if its type genus *Pachylemur* was not used as valid, this family name is unavailable under Article 11.7.1.1 of the Code.

5. Some other authors, mainly in the 19th and early 20th centuries (e.g. Flower, 1876 and various reprints of that paper; Claus, 1883), have mentioned *Pachylemur* Filhol or one of its derivatives, but we know of none that could be construed to have made the name available.

6. Grandidier (1899, p. 345) named a new genus and species of subfossil lemur as '*Palaeochirogalus Jullyi*' (here corrected to *Palaeochirogalus jullyi* following Articles 5.1 and 32.5.2.5 of the Code). Some subsequent authors used the genus name as valid (e.g. Lorenz von Liburnau, 1901), and Smith (1903, pp. 324, 336, 508) recombined it as *Lemur jullyi*. Grandidier (1905, p. 78) then synonymised his *Palaeochirogalus jullyi* with *Lemur insignis* Filhol, 1895. As far as we are aware, *Palaeochirogalus* has not been used as a valid name in the taxonomic literature since 1905. In the meantime, Standing (1904, p. 306) had named a new species, *Lemur jullyi*, without mentioning Grandidier's species of the same name.

7. Lamberton (1948, p. 7) proposed *Pachylemur* as a new subgeneric name for the extinct species *Lemur insignis*, *L. majori* Standing, 1908 and *L. jullyi*, without mentioning either *Pachylemur* Filhol or *Palaeochirogalus*. He did not specify whether his '*Lemur jullyi*' was based on *Palaeochirogalus jullyi* Grandidier or *Lemur jullyi* Standing. Lamberton did not designate a type species, and the name is therefore

unavailable under Article 13.3 of the Code; nevertheless, many subsequent authors have used it (see below). Although it was originally proposed as a subgenus and recognized as such until the 1970s, most authors have recognized *Pachylemur* Lamberton as a valid genus since Tardieu & Jouffroy (1979). Tattersall (1982, pp. 240–241) discussed the nomenclature of the two species of *Pachylemur*: a smaller species from southern lowland Madagascar, *Lemur insignis* Filhol, 1895, and a larger species from the Central Highlands, known as *Lemur jullyi* Standing, 1904 (by then including *Lemur majori* Standing, 1908). He argued that *Palaeochirogalus jullyi* Grandidier (which had previously been seen as a synonym of *L. insignis*) was in fact probably conspecific with *Lemur jullyi* Standing, which it also preoccupies. Therefore, he attributed *Lemur jullyi* to Grandidier (1899) instead. Most workers since then have also recognized two species, *P. insignis* (Filhol, 1895) and *P. jullyi* (Grandidier, 1899), although some have expressed doubts that the two are specifically distinct (reviewed by Godfrey & Jungers, 2002; Godfrey et al., 2010).

8. The name *Pachylemur* Lamberton, 1948, is now in universal usage in the scientific literature about lemurs for *Lemur insignis* Filhol, 1895 and related species (e.g. Godfrey et al., 1990; Jungers et al., 1991; Simons et al., 1995; Jungers et al., 1995; Godfrey et al., 1995; Shoshani et al., 1996; Godfrey & Jungers, 2002; Burney et al., 2004; Perez et al., 2005; Shapiro et al., 2005; Godfrey & Irwin, 2007; Burney et al., 2008; Orlando et al., 2008; Mittermeier et al., 2008; Gommery et al., 2009; Polk et al., 2009; Turvey, 2009; Godfrey et al., 2010; Virah-Sawmy et al., 2010; Crowley et al., 2011). Unlike some other extinct and extant lemur genera, *Pachylemur* lacks a well-established common name. If the name were to be replaced because it is predated by *Palaeochirogalus*, or preoccupied by one of the older uses of *Pachylemur*, or simply unavailable, it would cause considerable confusion and instability. The name *Palaeochirogalus* would be an especially unfortunate replacement for *Pachylemur*, since it is based on the generic name of the dwarf lemurs, *Cheirogaleus* Geoffroy, 1812; this name was frequently spelled *Chirogalus* in the 19th century and Grandidier (1899) himself used the French vernacular form ‘Chirogales’. *Pachylemur* is no longer considered to be closely related to the dwarf lemurs, which are now placed in a different family. The two most pressing threats to prevailing usage are the subjective senior synonym *Palaeochirogalus* Grandidier, 1899 and the unavailability of *Pachylemur* Lamberton, 1948. Since *Pachylemur* of Filhol, 1874 could perhaps be construed as having been proposed at genus-group level, it should be suppressed. *Pachylemur* of Gervais and family-group names based on it are clearly not available, so we do not request action from the Commission concerning these names. *Pachylemur* Palmer may be interpreted as only questionably unavailable; hence its suppression is requested. By suppressing both *Pachylemur* Filhol, 1874 and *Pachylemur* Palmer, 1904 at the genus level, the family-level names PACHYLEMURIDAE Miall, 1875 and PACHYLEMURIDAE Palmer, 1904, even if either is regarded as available, will become invalid under Article 39 of the Code. We propose that prevailing usage of the generic name be maintained by retroactively making the name *Pachylemur* Lamberton, 1948 available, and suppressing *Palaeochirogalus* Grandidier. No type species of *Pachylemur* Lamberton, 1948 has apparently ever been designated; we request that the Commission designate *Lemur insignis* Filhol, 1895 as the type species, as it was the first species of the genus to be described and the only one to be recognized as valid by all authors (e.g. Tattersall, 1973).

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to suppress the following generic names for the purposes of both the Principle of Priority and Principle of Homonymy;
 - (i) *Pachylemur* Filhol, 1874;
 - (ii) *Pachylemur* Palmer, 1904;
 - (b) to suppress the generic name *Palaeochirogalus* Grandidier, 1899 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
 - (c) to rule that the name *Pachylemur* Lamberton, 1948 is available from its original publication;
 - (d) to set aside all previous type species fixations for *Pachylemur* Lamberton, 1948 and designate *Lemur insignis* Filhol, 1895 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Pachylemur* Lamberton, 1948, type species *Lemur insignis* Filhol, 1895, as ruled in (1)(c) and (1)(d) above;
- (3) to place on the Official List of Specific Names in Zoology the name *insignis* Filhol, 1895, as published in the binomen *Lemur insignis*, specific name of the type species of *Pachylemur* Lamberton, 1948, as ruled in (1)(d) above.
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Pachylemur* Filhol, 1874, as suppressed in (1)(a)(i) above;
 - (b) *Pachylemur* Palmer, 1904, as suppressed in (1)(a)(ii) above;
 - (c) *Palaeochirogalus* Grandidier, 1899, as suppressed in (1)(b) above.

References

- Burney, D.A., Burney, L.P., Godfrey, L.R., Jungers, W.L., Goodman, S.M., Wright, H.T. & Jull, A.J.T. 2004. A chronology for late prehistoric Madagascar. *Journal of Human Evolution*, **47**: 25–63.
- Burney, D.A., Vasey, N., Godfrey, L.R., Rampilisonina, Jungers, W.L., Ramarolahy, M. & Raharivony, L. 2008. New findings at Andrahomana cave, southeastern Madagascar. *Journal of Cave and Karst Studies*, **70**: 13–24.
- Claus, C. 1883. *Lehrbuch der Zoologie*. 857 pp. N. G. Elwert'sche Verlagsbuchhandlung, Marburg & Leipzig.
- Crowley, B.E., Godfrey, L.R. & Irwin, M.T. 2011. A glance to the past: subfossils, stable isotopes, seed dispersal, and lemur species loss in Southern Madagascar. *American Journal of Primatology*, **73**: 25–37.
- Filhol, H. 1874. Nouvelles observations sur les mammifères des gisements de phosphates de chaux (Lémuriens et Pachylémuriens). *Annales des Sciences Géologiques*, **5**: 1–36.
- Filhol, H. 1895. Observations concernant les Mammifères contemporains des *Æpyornis* à Madagascar. *Bulletin du Muséum National d'Histoire Naturelle*, **1**: 12–14.
- Flower, W.H. 1876. Extinct *Lemurina*. *Annals and Magazine of Natural History*, (14)**17**: 323–328.
- Geoffroy Saint-Hilaire, É. 1812. Note sur trois dessins de Commerçon, représentant des quadrumanes d'un genre inconnu. *Annales du Muséum National d'Histoire Naturelle, Paris*, **19**: 171–175.
- Gervais, P. 1876. *Zoologie et paléontologie générales. Deuxième série*. 72 pp. Arthus Bertrand, Libraire-Éditeur, Libraire de la Société de Géographie, Paris.

- Godfrey, L.R. & Irwin, M.T. 2007. The evolution of extinction risk: past and present anthropogenic impacts on the primate communities of Madagascar. *Folia Primatologica*, **78**: 405–419.
- Godfrey, L.R. & Jungers, W.L. 2002. Quaternary fossil lemurs. In Hartwig, W.C. (Ed.), *The primate fossil record*. 530 pp. Cambridge University Press, Cambridge, England.
- Godfrey, L.R., Jungers, W.L. & Burney, D.A. 2010. Subfossil lemurs of Madagascar. In Werdelin, L. & Sanders, W.J. (Eds.), *Cenozoic mammals of Africa*. 986 pp. University of California Press, Berkeley, California.
- Godfrey, L.R., Simons, E.L., Chatrath, P.J. & Rakotosamimanana, B. 1990. A new fossil lemur (*Babakotia*, Primates) from northern Madagascar. *Comptes Rendus de l'Académie des Sciences*, (2)**310**: 81–87.
- Godfrey, L.R., Sutherland, M.R., Paine, R.R., Williams, F.L., Boy, D.S. & Vuillaume-Randriamanantena, M. 1995. Limb joint surface areas and their ratios in Malagasy lemurs and other mammals. *American Journal of Physical Anthropology*, **97**: 11–36.
- Gommery, D., Ramanivosoa, B., Tombomadiana-Raveloson, S., Randrianantenaina, H. & Kerloc'h, P. 2009. Une nouvelle espèce de lémurien géant subfossile du Nord-Ouest de Madagascar (*Palaeopropithecus kelyus*, Primates). *Comptes Rendus Palevol*, **8**: 471–480.
- Grandidier, G. 1899. Description d'ossements de Lémuriens disparus. *Bulletin du Muséum National d'Histoire Naturelle*, **5**: 344–348.
- Grandidier, G. 1905. Recherches sur les lémuriens disparus et en particulier sur ceux qui vivaient à Madagascar. *Nouvelles Archives du Muséum d'Histoire Naturelle*, (4)**7**: 1–142.
- Jungers, W.L., Godfrey, L.R., Simons, E.L. & Chatrath, P.S. 1995. Subfossil *Indri indri* from the Ankarana Massif of northern Madagascar. *American Journal of Physical Anthropology*, **97**: 357–366.
- Jungers, W.L., Godfrey, L.R., Simons, E.L., Chatrath, P.S. & Rakotosamimanana, B. 1991. Phylogenetic and functional affinities of *Babakotia* (Primates), a fossil lemur from northern Madagascar. *Proceedings of the National Academy of Sciences*, **88**: 9082–9086.
- Lamberton, C. 1948. Contribution à la connaissance de la faune subfossile de Madagascar: Note XVII. Les Pachylemurs. *Bulletin de l'Académie Malgache*, (n.s.)**27**: 7–22.
- Lorenz von Liburnau, L. 1901. Über einige Reste ausgestorbener Primaten von Madagaskar. *Denkschriften der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse*, **70**: 1–15.
- Miall, L.C. 1875. [Review of] Filhol, M. H. Nouvelles observations sur les Mammifères des gisements de phosphates de chaux (Lémuriens et Pachylémuriens). [Mammals from the phosphate-of-lime deposits.] Ann. Sci. Geol. t. v. art. 4, pp. 1–36, plates 7, 8. In Whitaker, W. (Ed.), *The geological record for 1874, an account of works on geology, mineralogy, and palaeontology published during the year*. 397 pp. Taylor and Francis, London.
- Mittermeier, R.A., Ganzhorn, J.U., Konstant, W.R., Glander, K., Tattersall, I., Groves, C.P., Rylands, A.B., Hapke, A., Ratsimbazafy, J., Mayor, M.I., Louis, E.E., Jr., Rumpler, Y., Schwitzer, C. & Rasoloarison, R.M. 2008. Lemur diversity in Madagascar. *International Journal of Primatology*, **29**: 1607–1656.
- Orlando, L., Calvignac, S., Schnebelen, C., Douady, C.J., Godfrey, L.R. & Hänni, C. 2008. DNA from extinct giant lemurs links archaeolemurids to extant indriids. *BMC Evolutionary Biology*, **8**: 1–9.
- Palmer, T.S. 1904. Index generum mammalium. A list of the genera and families of mammals. *North American Fauna*, **23**: 1–984.
- Perez, V., Godfrey, L., Nowakkemp, M., Burney, D., Ratsimbazafy, J. & Vasey, N. 2005. Evidence of early butchery of giant lemurs in Madagascar. *Journal of Human Evolution*, **49**: 722–742.
- Polk, J.D., Williams, S.A., Peterson, J.V., Roseman, C.C. & Godfrey, L.R. 2010. Subchondral bone apparent density and locomotor behavior in extant primates and subfossil lemurs *Hadropithecus* and *Pachylemur*. *International Journal of Primatology*, **31**: 275–299.
- Shapiro, L.J., Seiffert, C.V., Godfrey, L.R., Jungers, W.L., Simons, E.L. & Randria, G.F. 2005. Morphometric analysis of lumbar vertebrae in extinct Malagasy strepsirrhines. *American Journal of Physical Anthropology*, **128**: 823–839.

- Shoshani, J., Groves, C.P., Simons, E.L. & Gunnell, G.F.** 1996. Primate phylogeny: morphological vs molecular results. *Molecular Phylogenetics and Evolution*, **5**: 102–154.
- Simons, E.L., Godfrey, L.R., Jungers, W.L., Chatrath, P.S. & Ravaoarisoa, J.** 1995. A new species of *Mesopropithecus* (Primates: Palaeopropithecidae) from northern Madagascar. *International Journal of Primatology*, **16**: 653–682.
- Smith, G.E.** 1903. On the morphology of the brain in the Mammalia, with special reference to that of the lemurs, recent and extinct. *Transactions of the Linnean Society of London, Zoology*, (2)**8**: 319–432.
- Standing, H.F.** 1904. Rapport sur des ossements sub-fossiles provenant d'Ampasambazimba. 1. – Les Lémuriens (Suite). *Bulletin de l'Académie Malgache*, **3**: 305–310.
- Tardieu, C. & Jouffroy, F.K.** 1979. Les surfaces articulaires fémorales du genou chez les Primates: étude préliminaire. *Annales des Sciences Naturelles, Zoologie*, (13)**1**: 23–38.
- Tattersall, I.** 1973. Cranial anatomy of the Archaeolemurinae (Lemuroidea, Primates). *Anthropological Papers of the American Museum of Natural History*, **52**: 1–110.
- Tattersall, I.** 1982. *The Primates of Madagascar*. 382 pp. Columbia University Press, New York.
- Turvey, S.T.** 2009. Holocene mammal extinctions. In Turvey, S.T. (Ed.), *Holocene extinctions*. 352 pp. Oxford University Press, Oxford.
- Virah-Sawmy, M., Willis, K.J. & Gillson, L.** 2010. Evidence for drought and forest declines during the recent megafaunal extinctions in Madagascar. *Journal of Biogeography*, **37**: 506–519.

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Comment on CHILODONTIDAE Macalister, 1876 (Ciliophora), CHILODONTINAE Eigenmann, 1910 (Pisces, Characiformes) and CHILODONTINAE Wenz, 1938 (Mollusca, Gastropoda): proposed resolution of homonymy between family-group names

(Case 3555; see BZN 68: 175–179)

D.L. Geiger

Santa Barbara Museum of Natural History, 2559 Puesta del Sol Road, Santa Barbara, CA 93105, U.S.A. (e-mail: geiger@vetigastropoda.com)

The central issue is whether the emendation of the fish family-level name is justified. It becomes a balancing act between two principles of zoological nomenclature: original intent vs. stability. In the case of the fish family CHILODIDAE Eigenmann, 1910 [original spelling], there is no indication that the family name was malformed in the original description. The subsequent arguments cited in Case 3555 are at best adventurous and could just as well be considered an unjustified emendation.

For the fish type-genus *Chilodus* Müller & Troschel, 1844, there is no perceptible reference to teeth. Generally in nomenclature, much deference is given to the original spelling, even if it might be at slight variance to traditional linguistics. An example is the alternate spelling of *silva* and *sylva* for the Latin ‘forest’; the letter *y* is unknown in the classical Latin alphabet, but spellings with *y* are maintained (e.g. *Scissurella transylvanica* Reuss, 1860). Or consider the case of *Scissurella evaensis* Bandel, 1998 with locative suffix *–ensis*, although the species was explicitly named for Mrs Eva Vinx. Geiger (2003) as first reviser explicitly retained the original spelling as it was carried out consistently. The argument that the diphtong *–ou* is equivalent to *–u* is one interpretation of the Code (Article 29.3.2). An alternate interpretation is the significant single letter variance (Article 58 Example). Whether *–odus* or *–us* is the correct suffix is a further issue, as *chil-* as well as *chilod-* are equally good prefixes. The Code does not require the names to be formal, grammatically correct derivations, they do not need to convey meaning in any specific language (e.g. fish genus *Abudefduf*, snail genus *Ittibittium*), they only need to sound Latin. *Chilodus* with root *Chilod-* meets those criteria. While the *–u/-ou-* equivalence may be supported by additional data in other type-genera of fish families, it is not sufficient to extend this observation to all such generic names ending in *–odus*. Nomenclature is based on the examination of individual cases, not the overextension of select observations.

In summary, the simpler construct in agreement with the original spelling with the fewest unsupported, ad-hoc assumptions should be chosen as basis for the formation of names. The linguistic argument for the emendation of the fish family name has to be dismissed.

If the fish name is accepted as outlined in Case 3555, it sets a dangerous precedent for more nomenclatural alterations at the whim of subsequent authors. If the emended fish spelling should be maintained by the Commission, then it should be made clear in the accompanying Opinion that the emendation is unjustified, and that it is retained solely in the interest of stability. One could even debate the argument of stability, as one name – Mollusca or fish – has to be changed, but there is only a 12 year difference between the certainly properly formed molluscan name by Wenz (1938) and the emendation of the fish family in 1950. One may argue that the already

emended name should be further modified, whereas the certainly properly formed one is to be retained in its original spelling. If it is accepted that the already emended fish name should be modified, it would be most appropriate to revert to the original spelling of Eigenmann, serving at once the purpose of removing homonymy and respecting original intent.

In conclusion, I advocate the reversion of the fish family name to the original CHILODIDAE, retaining the molluscan CHILODONTIDAE unchanged, and placing the unused protistan CHILODONTIDAE on the Official Index.

Additional references

Geiger, D.L. 2003. Phylogenetic assessment of characters proposed for the generic classification of Recent Scissurellidae (Gastropoda: Vetigastropoda) with description of one new genus and six new species from Easter Island and Australia. *Molluscan Research*, **23**: 21–83.

Comment on *Pleurotoma scabriuscula* Brugnone, 1862 (currently *Mangelia scabriuscula*; Mollusca, Gastropoda, CONOIDEA): proposed conservation
(Case 3558; see BZN **68**: 180–183)

Riccardo Giannuzzi Savelli

Via Mater Dolorosa, 54, Palermo, Italy (e-mail: malakos@tin.it)

Francesco Pusateri

Via Castellana 64, 90135 Palermo, Italy (e-mail: francesco@pusateri.it)

We strongly support the application of Scarponi et al. and we fully agree with their well presented considerations. We consider it to be of primary interest to maintain the stability of nomenclature.

Comments on *Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE): request for a ruling on the availability of the generic name
Case 3518; (see BZN **68**: 97–104)

(1) Dietrich Kadolsky

66 Heathhurst Road, Sanderstead, Surrey CR2 0BA, U.K.
(e-mail: kadolsky@btsgeo.com)

I agree with Cowie's interpretation of Article 1.3.2 of the Code, and his application of this Article to the name *Cornu* Born, 1778. Consequently, I support fully his proposals. The endorsement by the ICZN of this genus-group name as being valid would be most conducive to the stability of the genus name of this very common land snail, as *Cornu* is the most senior name of those potentially involved.

A few details may be added to the application:

A live scalarid specimen of *Cornu aspersum* resembling the specimen described and figured by Born (1778) was figured by Bailey (2006, p. 12). Schileyko (2006, p. 1817, fig. 2330B) illustrates a syntype of *Cornu copiae* Born.

Additional references:

- Bailey, B. 2006. Scalariform Canthareus [sic] aspersus. *The Malacologist. Bulletin of the Malacological Society of London*, **47**: 12.
- Schileyko, A.A. 2006 ("XI. 2005"). *Treatise on recent terrestrial pulmonate molluscs. Ruthenica, Supplement*, **2**(14): 1907–2047.

(2) Cristian R. Altaba

Department of Philosophy and Social Work, University of the Balearic Islands, 07122 Palma, Balearic Islands, Spain
(e-mail: cristianr.altaba@uib.cat)

Why it is *Cryptomphalus*, not *Cornu*

The land snail described as *Helix aspersa* Müller, 1774 (included in the Official List of Specific Names in Zoology by Opinion 336, Opinions and Declarations, **10**: 77–108, March 1955) is native to a small area in the central Mediterranean, but has long been introduced throughout most of western and central Europe, and more recently into virtually all temperate areas (Barker, 1999; Madec *et al.*, 2003). It is usually abundant, and is indeed an economically relevant species, both as food and as an agricultural pest. That this species is currently referred to in the zoological literature by no less than four generic assignments (letting aside misspellings) is surely problematic. Some of the reasons for this situation are taxonomic, but nomenclature is also a key issue. Recently, Cowie (BZN **68**: 97–104) has proposed that the wording of Article 1.3.2 be interpreted to confirm the availability of *Cornu* Born, 1778. Herewith I show that there are no grounds or need for any such ruling.

The distinctiveness of *Helix aspersa* relative to *Helix pomatia* Linnaeus, 1758 (type of *Helix* Linnaeus, 1758) was clearly stated by Charpentier (1837) when erecting *Cryptomphalus*, and thoroughly documented by Moquin-Tandon (1855), who used it as subgenus. This combination *Helix (Cryptomphalus) aspersa* has been used by many subsequent authors (Bofill & Haas, 1919a, 1919b, 1920; Bofill *et al.*, 1920; Germain, 1930; Degner, 1930; Webb, 1943; Pilsbry, 1940; Renoux & Quatrefarges, 1951; Sparks, 1952; Colom, 1957; Zilch, 1960; Giusti, 1969; Bizot, 1971; Bequaert & Miller, 1973; Damjanov & Likharev, 1975; Backhuys, 1975; Manga-González & Cordero del Campillo, 1979; Hartwig *et al.*, 1980; Hueto *et al.*, 1982; Manga-González, 1983; Altimira Aleu & Altaba, 1985; Mas-Coma & Montoliu, 1987; Morrondo & Manga, 1989; Ferreri, 1994; Manga & Morrondo-Pelayo, 1994; Gracenea & González-Moreno, 2002). Recognizing conspicuous differences with the various species included in *Helix* s.s., genus rank for *Cryptomphalus* has also been widely used, either as *Cryptomphalus aspersus* (Haas, 1918, 1924a,b, 1929; Aguilar-Amat, 1929, 1933; Colom, 1954; Español i Cabeza, 1969; Jaeckel, 1969; Mercadal *et al.*, 1970; Gasull, 1972; Parisi & Gandolfi, 1974; Gasull & Alcover, 1982; Falkner, 1990, 1993; Frank, 1995; Cossignani & Cossignani, 1995; Turner *et al.*, 1998; Gallo, 1998; Baminger & Haase, 1999; Kerney *et al.*, 1999; Robinson, 1999, 2001; Badii &

Flores, 2001; Bojat et al., 2001; Scarabino, 2003; Yildirim et al., 2004; Kiss et al., 2004; Campos & Calvo, 2006; Schileyko, 2006; Sverlova, 2006; Hubenov, 2007; Egorov, 2008; Sysoev & Shileyko, 2009), without gender agreement (*Cryptomphalus aspersa*: Goeden, 1974; Paniagua & Vázquez, 1976; Flores et al., 1986a, b, 1988, 1992; Faus, 1988; Dedov, 1998; Tribó et al., 1999; Brieva et al., 2008; Leonov, 2009), or with various misspellings (such as *Criptomphalus aspersus*: Ortiz de Zárate López, 1991). The above references are by no means the outcome of an exhaustive search; but they suffice to show that the majority of authors from a wide variety of specialties and countries have placed *H. aspersa* within *Cryptomphalus*. The discovery of a single synapomorphy in the internal structure of the male genitalia shared by *H. aspersa* with *H. aperta* Born, 1778 (type of *Cantareus* Risso, 1826) enabled Giusti et al. (1996) to synonymize *Cryptomphalus* as junior synonym, thus proposing the combination *Cantareus aspersus*. This has been followed by some authors (Neubert, 1998; Barker, 1999; Koene & Schulenburg, 2005; Manganelli et al., 2005; Wade et al., 2006, 2007; Ansart et al., 2007; Groenenberg et al., in press). However, lumping *H. aspersa* and *H. aperta* within *Cantareus* on the basis of a single shared trait ignores the conspicuous differences in general morphology, external appearance and ecology between these two species (already shown by Moquin-Tandon, 1855), and is at odds with the tendency to recognize small genera within HELICOIDEA by those same authors. At any rate, using *Cantareus aspersus* is a taxonomic decision that may not be sound but is in agreement with the Code.

As shown by molecular studies (Manganelli et al., 2005; Groenenberg et al., in press), *H. aspersa* and *H. aperta* are indeed closely related taxa. The closest genus to this clade is *Eobania* Hesse, 1913, while *Helix* proper is more distantly related. This is relevant in biogeographic terms. The group formed by *Eobania*, *Cryptomphalus* and *Cantareus* is native to southernmost Italy and Sicily. Remarkably, this area exported several land snail species throughout the Mediterranean already in Ancient times (Altaba, 2000). An implication for nomenclature is that the all-too-usual, surely Code-compliant, attractively simple option of leaving *Helix aspersa* within *Helix* (while accepting the validity of the very distinctive *Eobania*, which nobody appears to question) just doesn't agree with a natural taxonomy.

In the curiosities vogue of 18th century natural history cabinets, Born (1778) gave notorious relevance to an open-coiled terrestrial shell – it is the only figured specimen in a final color plate where it is shown in two views; (this plate is actually referred to in the text, contrary to the statement by Cowie (BZN 68: 97–104)). Obviously it was considered a nature's wonder. Indeed, in the preface he warns the reader that he has strictly followed the Linnaean system ('Eas Conchyliorum species, quas Linnaei systema haud completitur, methodo, summo huic vir usitata, descripsi. . .'), refraining from any alternative, in order to highlight the rarest of nature's objects ('in iis rarum et singulare admirandum est'). Thus he named the open-coiled shell *Cornu copiae* – an obvious word game referring to the shape of such unique a specimen. In its description, Born (p. 372) states that maybe this is different from Müller's (1774) species 313 (more explicit in the German text: 'Dadurch unterscheidet sie sich als eine besondere Art von einer, welcher Seba und Argenville und vielleicht auch von der, welcher Otto Müller gedenket.'). The latter is *Helix scalaris* (Müller, 1774, pp. 113–114), described as a shell having the color and texture of *H. pomatia*, yet truly splendidly distinct from other of its kind by its shape ('Testa colore & substantia *H.*

Pomatia, figura vero a congeneribus splendide distincta. . .'). Müller refers to a figure in Argenville (1757, pl. 9, fig. 8 and p. 82), stating that his 'species' is not the same as that shown there, because the soft parts depicted in that figure are rather those of an aquatic snail. Indeed, Argenville's figure (reproduced also in the posthumous third edition of his work in 1780, Pl. LXXVI, fig. L) shows an (almost) open-coiled *H. aspersa* from whose aperture an abnormal head-foot pops out – likely as a pictorial indication of the teratological nature of such specimen. These soft parts are reported as most unusual: 'Il paroît que cet animal se partage en deux parties: dans l'une est son col, avec sa tête garnie de deux cornes, & de ses yeux en dehors; dans l'autre est situé le reste de son corps terminé par un opercule' (Argenville, 1762, p. 82). At any rate, the soft parts of this open-coiled land snail in Argenville (1757, 1780) are surely invented, and thus Müller (1774) was wrong in maintaining that his *H. scalaris* was different from the shell in that figure. It appears also that Müller was fully aware of the fact that the traits separating his *H. scalaris* from other specimens of its kind (i.e. conspecific individuals of *H. aspersa*) were of a unique, individual nature. Likewise, Born's *Cornu copiae* appears to be a junior synonym of *H. scalaris*. In a later edition, Born (1780) kept placing great value on his *Cornu copiae*, this time illustrating it, also in two views, inside an elaborate frame. Judging from the figures published by Born, *Cornu copiae* could be a teratological individual of either *H. pomatia* or *H. aspersa*, or even *Eobania vermiculata* (Müller, 1774). However, because from its description it appears to be the same as *H. scalaris* Müller, 1774, and given that the latter was clearly stated to be an individual, albeit splendid aberration, it follows that *Cornu copiae* is indeed based on a teratological specimen that was known as such. Thus, the binomen *Cornu copiae* is objectively not valid according to Article 1.3.2 of the Code and there is no need for either Schileyko's (2006) claim that it should be considered a nomen oblitum (correctly dismissed by Cowie, BZN 68: 97–104), or Cowie's proposal.

The teratological nature of *Cornu copiae* was unanimously agreed upon by all workers during nearly two centuries. The opinions of Deshayes (1832, 1838), Beck (1838), Gray (1847), Forbes & Hanley (1853) and Taylor (1910) are reviewed by Cowie (BZN 68: 97–104), but it is worth adding a few more. Pfeiffer (1841) didn't mention it, even when dealing with other parts of Born's books. Later on, Pfeiffer (1848, p. 242) was exhaustive and thus listed under *Helix aspersa* its 'var. δ ', a monstrosity with detached whorls that fits exactly what Born (1780) showed ('Monstrosa, scalaris vel anfractibus omni solutis: Born Mus. t. 13. f.10.11.'). Leach (1852, Pl. II, fig. 2) shows a live individual of the very rare 'open-turreted variety'. Germain (1930, p. 35) mentioned indeed (against Cowie's statement) the cornucopia monstrosity that occasionally affects large helicids: 'Enfin, exceptionnellement, la coquille, entièrement déroulée, affecte assez nettement la forme d'une corne d'abondance; elle est cératoïde (*Helix pomatia* L., *H. aspersa* Müll.).' Gasull (1972, lám. 1, fig. 1) showed a cornucopioid *Cryptomphalus aspersus* from Mallorca.

The proposal to use *Cornu* (as subgenus) instead of its purported junior synonym *Cryptomphalus* was first made by Pilsbry (1948: 1091). As Cowie (BZN 68: 97–104) points out, the lack of followers to this claim may have been due to this being stated in the 'Additions and Corrections' at the very end of his monumental work. However, what Pilsbry actually says about *Cornu* is relevant: 'This name was not used in my text because I thought that a genus founded on an abnormal specimen is



Fig. 1. Cornucopioidean *Cryptomphalus aspersus* (Müller, 1774). Left, type specimen of *Cornu copiae* Born, 1778 in the Natur historisches Museum Wien (37.4 mm) (courtesy of Anita Escher, curator of molluscs). Right, specimen in the Salvador Cabinet (ca. 1750), at the Botanical Institute of Barcelona (36.3 mm).

invalid. However, nothing in the International code seems to exclude such names.' This is exactly what Article 1.3.2 of the current Code addresses. As shown above, *Cornu copiae* was indeed intended for a teratological specimen as such (contrary to the claim by Cowie, BZN 68: 97–104).

The second stand to resurrect *Cornu* was by Waldén (1976). This apparently stems from a mistaken, superficial reading of Born's work, without considering the above-mentioned references given therein to previous works. The same error was made by Gerber (2000), who claimed that Born considered *Cornu copiae* a valid and distinct species. Gerber makes an untenable leap between the modern concept of biological species and the individual curiosity named by Born during the Enlightenment era of natural history cabinets. This was followed uncritically by Falkner et al. (2001). Likewise, Roth & Sadeghian (2003) backed the use of *Cornu*, having failed to find any evidence of an indication of the teratological nature of *Cornu copiae* in distinction to

other individuals of the same species (ignoring the reference to Müller's *H. scalaris*). Anderson (2005) justified the use of *Cornu* based on both the previous choice by Waldén (1976) and the apparent need for a genus-level name for *H. aspersa*: 'The generic name for the common garden snail has been a source of controversy for some time. At least three alternatives are circulating in the literature, including *Cantareus* Risso and *Cryptomphalus* Charpentier, which are now generally applied to species in different helicid clades from *aspersa*.' However, this is incorrect, because *H. aspersa* is indeed the type of *Cryptomphalus*. Thus, nothing actually sustains the purported availability of *Cornu*. It is troublesome that such an error can slip into regional species lists with such ease (e.g. Falkner et al., 2001; Roth & Sadeghian, 2003; Stanisic et al. 2010). Nevertheless, a few publications can still be found where the name *Cornu aspersum* is actually used (see references in Cowie, BZN 68: 97–104).

Without taking into account the reference to previous works, and looking only at the figures by Born (1778, 1780), *Cornu copiae* could in fact be any cornucopiod specimen belonging to the group formed by *Helix* s.s., *Cryptomphalus*, *Cantareus* and *Eobania*. Remarkably, none of the proponents of *Cornu* appear to have actually examined any type material. Fortunately, the holotype of *Cornu copiae* is extant. Thanks to Anita Escher, Curator of Mollusks at the Natural History Museum in Vienna, it has been located (Fig. 1, left). Inside the aperture, the word 'Born' is written in ink. It is indeed an open-coiled (i.e. 'cornucopiod') specimen of *Helix aspersa*. The accompanying label refers to its teratological nature as already indicated by Pfeiffer (1841), who may have actually studied this type specimen.

A remarkably similar specimen exists in the Salvador Cabinet, now housed at the Botanical Institute of Barcelona (IBB). This cabinet (Camarasa Castillo, 2004; Ibáñez, 2006) was built by three generations of the enlightened Salvador family. The cabinet was closed in 1854, the shell collection is still in good condition and retains many of the original labels. A preliminary inventory of this malacological collection showed that it contains specimens originating in many distant countries (Hernández et al., 2003). Indeed, it was mentioned by Argenville (1780, p. 314) as one of the most important natural history cabinets of his time. The Salvadors maintained an intense exchange of letters and specimens with naturalists of all Europe, including Linnaeus – who named the plant genus *Salvadora* after them. Also preserved are documents relative to the acquisition of shells from James Petiver and Hans Sloane – who acquired several important natural history collections and left his own to be the origin of the British Museum. I have examined the Salvador Cabinet thanks to the kind interest of its custodians, Josep Montserrat, Neus Ibáñez and staff at IBB. A central cell in one of the shell drawers contains two odd *H. aspersa* specimens: a scalariform (very high-spined but with whorls attached) and a cornucopiod. The latter has its apex broken, but is surprisingly similar to the holotype of *Cornu copiae* in Vienna (Fig. 1, right). The accompanying label, written in Spanish, states that this is a variety of *Helix aspersa* (normal specimens have number 88 written in ink and also on their label) 'resulting from an illness of the worm' ('Varietas de n° 88 que es el resultado de una enfermedad del gusano'). Older labels and documents in the Salvador Cabinet are all written in Catalan, but this was forbidden in official paperwork after the defeat of the Austrian and Catalan army in 1714. Thus, the cornucopiod's label was likely written when the stylish drawers intended for public exhibition were set.

The Vienna and Barcelona cornucopioids may come from the same population. This is a likely possibility, because Born studied in Vienna the natural history collection that was the origin of the present Natural History Museum (Riedl-Dorn, 1999). Most of it had been bought by the Austrian Emperor in 1749 from the Duke of Tuscany. That collection was largely assembled by Giovanni de Baillou (also known as Johann Ritter von Baillou or Jean Chevallier de Baillou), who had become director of the Uffici in Florence in 1735 and followed his cherished objects to become the first director of the Hof Cabinet. The cornucopioid shells were an extremely rare and sought after curiosity, and it is quite likely that both Argenville and Baillou obtained them from the Salvadors. At any rate, what the Salvador cornucopioid proves is that the teratological nature of such a land shell was public knowledge among learned naturalists of the Enlightenment. All the evidence suggests that Born must have been aware of the fact that his *Cornu copiae* was representing a teratological (and splendid) variation.

It is therefore my opinion, that the Commission should not rule on Case 3518 as proposed by Cowie. The proposal to make *Cornu* available is not based on actual facts, because *Cornu copiae* was based on a teratological specimen known from the start as such. Therefore, the current Code solves this case without any extraordinary ruling. Moreover, the use of *Cornu* (instead of *Cryptomphalus*) has been promoted by a minority of authors in the last decade, on the basis of mistaken reading of the literature, no consultation of type material, and forced interpretation of early zoological nomenclature. Such a proposal would vulnerate stability, unicity and universality of the names of animals, and thus should be disregarded.

Additional references

- Aguilar-Amat, J.B. d'.** 1929. Observaciones malacológicas. VIII. Moluscos de una excursión a la Alta Garrotxa (Gerona). *Butlletí de la Institució Catalana d'Història Natural*, **29**: 111–112.
- Aguilar-Amat, J.B. d'.** 1933. Observacions malacològiques. XIX. Contribució al coneixement de la malacofauna menorquina. *Butlletí de la Institució Catalana d'Història Natural*, **33**: 324–338.
- Altaba, C.R.** 2000. Are all mass invasions alike? *Trends in Ecology and Evolution*, **15**: 248.
- Altimira Aleu, C. & Altaba, C.R.** 1985. Els mol·luscs terrestres de les Illes Medes. Pp. 223–230, in Ros, J., Olivella, I. & Gili, J.M. (Eds.), *Els sistemes naturals de les Illes Medes*. Institut d'Estudis Catalans, Barcelona.
- Anderson, R.** 2005. An annotated list of the non-marine mollusca of Britain and Ireland. *Journal of Conchology*, **38**: 607–637.
- Argenville, A.-J.D. d'.** 1757. *L'histoire naturelle éclaircie dans une des ses partie principales, la Conchyliologie, qui traite des coquillages de mer, de rivière et terre; ouvrage dans lequel on trouve une nouvelle méthode latine & françoise de les diviser: augmentée de la Zoomorphose, ou représentation des animaux à coquilles, avec leurs explication. Nouvelle édition, enrichie de figures dessinées d'après Nature*. 394 pp., 9, 3 pls. De Bure, Paris.
- Argenville, A.-J.D. d'.** 1780. *La Conchyliologie, ou histoire naturelle des coquilles de mer, d'eau douce, terrestres et fossiles, avec un traité de la Zoomorphose, ou représentation des animaux qui les habitent: ouvrage dans lequel on trouve une nouvelle méthode de les diviser*. 3e édition. De Bure, Paris. 878 pp., pls. I-LXXX (+ 1) [facsimile edition of plates, 2009. 216 pp. Taschen, Köln].
- Backhuys, W.** 1975. *Land and freshwater mollusks of the Azores*. xii, 350 pp., 32 pls., 97 maps. Backhuys & Meesters, Amsterdam.
- Badii, M.H. & Flores, A.E.** 2001. Prickly pear cacti pests and their control in Mexico. *Florida Entomologist*, **84**: 503–505.

- Baminger, H. & Haase, M.** 1999. Variation in spermathecal morphology and amount of sperm stored in populations of the simultaneously hermaphroditic land snail *Arianta arbustorum*. *Journal of Zoology*, **249**: 165–171.
- Bequaert, J.C. & Miller, W.B.** 1973. *The mollusks of the arid southwest. With an Arizona checklist*. xvi, 271 pp. University of Arizona Press, Tucson.
- Bizot, M.** 1971. Activité hémagglutinante des extraits de glande d'albumine de *Helix* (*Cryptomphalus*) *aspersa* et de *Helix* (*Helix*) *pomatia*. *Revue Française de Transfusion*, **14**: 445–53.
- Bofill, A. & Haas, F.** 1919a. Mol·luscos recollits en Astúrias, en 1918 per Josep Maluquer, precedits de consideracions bibliogràfiques sobre la malacologia asturiana. *Butlletí de la Institució Catalana d'Història Natural*, **19**: 25–34.
- Bofill, A. & Haas, F.** 1919b. Mol·luscos terrestres i d'aigua dolça de la regió de Tortosa. *Butlletí de la Institució Catalana d'Història Natural*, **19**: 128–131.
- Bofill, A. & Haas, F.** 1920. Estudi sobre la malacologia de les valls pirenaïques. Conca del Llobregat. *Treballs del Museu de Ciències Naturals de Barcelona*, **3** (Sèr. Zool., 13): 381–831.
- Bofill, A., Haas, F. & Aguilar-Amat, J.B. d'.** 1920. Estudi sobre la malacologia de les valls pirenaïques. Conques del Besòs, Ter, Fluvià, Muga i litorals intermitjes. *Treballs del Museu de Ciències Naturals de Barcelona*, **3** (Sèr. Zool., 14): 837–1241.
- Camarasa Castillo, J.M.** 2004. De col·lecció privada a museu públic: el gabinet Salvador de l'Institut Botànic de Barcelona. *Afers: fulls de recerca i pensament*, **19**: 721–727.
- Campos, J. & Calvo, A.** 2006. Moluscos introducidos en Uruguay. *Comunicaciones de la Sociedad Malacológica del Uruguay*, **9**: 75–78.
- Colom, G.** 1954. *El medio y la vida en las Baleares*. xx, 292 pp. Published by the author, Palma de Mallorca.
- Colom, G.** 1957. *Biogeografía de las Baleares. La formación de las islas y el origen de su flora y de su fauna*. 568 pp. Estudio General Luliano, Palma de Mallorca.
- Cossignani, T. & Cossignani, V.** 1995. *Atlante delle conchiglie terrestre e dulciaquicole italiane*. 208 p. L'Informatore Piceno, Ancona.
- Damjanov, S. & Likharev, I.** 1975. *Fauna Bulgarica, Gastropoda terrestria, vol. IV*. 425 pp. Publications of the Bulgarian Academy of Science, Sofia.
- Dedov, I.K.** 1998. Annotated check-list of the Bulgarian terrestrial snails (Mollusca, Gastropoda). *Linzer biologische Beiträge*, **30**: 745–765.
- Degner, E.** 1930. Über das Höhen-Breitenverhältnis der Schneckenschalen, nebst einigen variationsstatistischen Angaben über *Cepaea* und *Zebrina*. *Zoomorphologie*, **17**: 124–144.
- Egorov, R.** 2008. *Treasure of Russian shells. Supplement 5. Illustrated catalogue of the recent terrestrial molluscs of Russia and adjacent regions*. 179, [1] pp. Published by the author, Moscow.
- Español i Cabeza, J.** 1969 (1968). Contribució al coneixement de la morfologia i l'anatomia interna dels pulmonats basomatòfors. *Treballs de la Societat Catalana de Biologia*, **25**: 47–52.
- Falkner, G.** 1990. Binnenmollusken. Pp. 112–286 in Steinbach (Ed.), *Weichtiere*. Mosaik, München.
- Falkner, G.** 1993. Moluscos de interior. Pp. 112–286, in Steinbach (Ed.), *Moluscos. Moluscos europeos marinos y de interior*. Blume, Barcelona.
- Faus, F.V.** 1988. Contribución al conocimiento de la malacofagia de *Rattus rattus* (Linnaeus, 1758). *Mediterránea, Serie Biología*, **10**: 19–27.
- Ferreri, D.** 1994. Contributo alla conoscenza della malacofauna della Riserva Naturale 'Le Cesine' (Lecce). *Thalassia Salentina*, **20**: 67–75.
- Flores, V., Brusco, A. & Pecci Saavedra, J.** 1986a. The serotonergic system in *Cryptomphalus aspersa*. Immunocytochemical study with an anti-5-HT antiserum. *Journal of Neurobiology*, **17**: 547–561.
- Flores, V., Brusco, A. & Pecci Saavedra, J.** 1988. Immunocytochemical study of the postnatal development of 5-HT-containing neurons and fibers in the cerebroid ganglia of *Cryptomphalus aspersa*. *International Journal of Developmental Neuroscience*, **6**: 359–366.

- Flores, V., Brusco, A. & Pecci, J. 1986b. The origin of 5-HT fibers of the tentacular sensory organs of *Cryptomphalus aspersa*. An immunocytochemical study following transection of the cerebro-tentacular connective. *Journal of Neurobiology*, **17**: 563–568.
- Flores, V., Brusco, A., Scicolone, G. & Pecci Saavedra, J. 1992. Serotonergic reinnervation of regenerating tentacular sensory organs in a pulmonate snail, *Cryptomphalus aspersa*. *International Journal of Developmental Neuroscience*, **10**: 331–340.
- Frank, C. 1995. Die Weichtiere (Mollusca): über Rückwanderer, Einwanderer, Verschleppte; expansive und regressive Areale. In: Einwanderer/Neue Tierarten erobern Österreich. *Stapfia*, **37**: 17–53.
- Gallo, G. 1998. *El caracol: cría y explotación*. 2a. ed. 179 pp. Mundi-Prensa, Madrid.
- Gasull, L. & Alcover, J.A. 1982. La cova de Ca na Reia: desconcertant estació malacològica del Pleistocè de les Pitiüses. *Endins*, **9**: 41–44.
- Gasull, L. 1972 ('1970') Casos teratológicos en los helícidos de Baleares. (Gastrop. Pulm). *Boletín de la Sociedad de Historia Natural de Baleares*, **16**: 20–22.
- Gerber, J. 2000. [Review of] Giusti, F., Manganelli, G. & Schembri, P.J. (1996): The non-marine molluscs of the Maltese Islands. *Heldia*, **3**: 42–44.
- Germain, L. 1930. Mollusques terrestres et fluviatiles (première partie). *Faune de France*, **21**: 1–477. Paul Lechevalier, Paris.
- Goeden, R.D. 1974. Comparative survey of the phytophagous insect faunas of Italian thistle, *Carduus pycnocephalus*, in southern California and southern Europe relative to biological weed control. *Environmental Entomology*, **3**: 464–474.
- Gracenea, M. & González-Moreno, O. 2002. Life cycle of *Brachylaima mascomai* n. sp. (Trematoda: Brachylaimidae), a parasite of rats in the Llobregat Delta (Spain). *Journal of Parasitology*, **88**: 124–133.
- Groenenberg, D.S.J., Neubert, E. & Gittenberger, E. (in press). Reappraisal of the "Molecular phylogeny of Western Palaearctic Helicidae s.l. (Gastropoda: Stylommatophora)": When poor science meets GenBank. *Molecular Phylogenetics and Evolution* (2011), doi:10.1016/j.ympev.2011.08.024
- Haas, F. 1918. Contribució a la fauna malacològica de Catalunya. Alguns mol·luscos terrestres i d'aigua dolça de la Província de Tarragona. *Butlletí de la Institució Catalana d'Història Natural*, **18**: 70–72.
- Haas, F. 1924a. Contribució a la fauna malacològica de la conca inferior de l'Ebre. *Butlletí de la Institució Catalana d'Història Natural*, **24**: 48–63, lám. II.
- Haas, F. 1924b. Beitrag zur Molluskenfauna des unteren Ebrogenbietes. *Archiv für Molluskenkunde*, **56**: 137–160.
- Haas, F. 1929. Fauna malacològica terrestre y de agua dulce de Cataluña. *Trabajos del Museos de Ciencias Naturales de Barcelona*, **13**: 1–491. (Reprinted in 1991 as *Treballs del Museu de Zoologia*, **5**: 1–491).
- Hartwig, H.G., Brisson, P., Lyncker, I. & Collin, J.P. 1980. Aminergic systems in pulmonate gastropod molluscs. *Cell and Tissue Research*, **210**: 223–234.
- Hernández, E., Cadevall, J., Orozco, A., Nebot, J., Bros, V. & Uribe, F. 2003. *Informe sobre la col·lecció malacològica Gabinet Salvador*. Associació d'Amics del Museu de Zoologia, Barcelona (unpublished report).
- Hesse, P. 1913. Zur Kenntnis der Molluskenfauna von Ostrumelien. II. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft*, **45**: 1–16.
- Hubenov, Z. 2007. Fauna and zoogeography of marine, freshwater, and terrestrial mollusks (Mollusca) in Bulgaria. Pp. 141–XXX, in Fet, V. & Popov, A. (Eds.), *Biogeography and ecology of Bulgaria*. Springer, Dordrecht.
- Hueto, M.N., Martínez, A.M., Barber, A. & Ponz, F. 1982. Active transport of L-phenylalanine by snail intestine, *Helix* (*Cryptomphalus*) *aspersa*. *Revista Española de Fisiología*, **38**: 403–408.
- Ibáñez i Cortina, N. 2006. *Estudis sobre cinc herbaris històrics de l'Institut Botànic de Barcelona*. 290 pp. PhD thesis, University of Barcelona, Barcelona.
- Jaekel, S.G.A. 1969. Die Mollusken Südamerikas. Pp. 794–827, in Fittkau, E. J. (Ed.), *Biogeography and ecology in South America*, vol. 2. Junk, The Hague.

- Kerney, M.P., Cameron, R.A.D. & Bertrand, A. 1999. *Guide des escargots et limaces d'Europe*. 370 pp., 28 pls. Delachaux et Niestlé, Paris.
- Kiss, L., Magnin, F. & Torre, F. 2004. The role of landscape history and persistent biogeographical patterns in shaping the responses of Mediterranean land snail communities to recent fire disturbances. *Journal of Biogeography*, **31**: 145–157.
- Leach, W.E. 1852. *Molluscorum Britanniae Synopsys. A synopsis of the Mollusca of Great Britain, arranged according to their natural affinities and anatomical structure*. xvi, 376 pp., pls. i–xiii. John Van Vorst, London.
- Leonov, S.V. 2009. Land mollusks (Mollusca; Gastropoda) of Crimea: species check-list. Optimization and Protection of Ecosystems. *TNU*, **20**: 14–19.
- Madec, L., Bellido, A. & Guiller, A. 2003. Shell shape of the land snail *Cornu aspersum* in North Africa: unexpected evidence of a phylogeographical splitting. *Heredity*, **91**: 224–231.
- Manga, M.Y. & Morrondo-Pelayo, M.P. 1994. Larval development of ovine *Neostromylus linearis* in four experimentally infested mollusc species. *Journal of Helminthology*, **68**: 207–210.
- Manga-González, M.Y. & Cordero del Campillo, M. 1979. Helicidae (Gastropoda, Pulmonata) hospedadores intermediarios actuales o potenciales, de *Dicrocoelium dendriticum* en la provincia de León, nor-oeste de España. *Haliotis*, **8**: 179–182.
- Manga-González, M.Y. 1983. *Los Helicidae (Gastropoda, Pulmonata) de la provincia de León*. Diputación Provincial de León. 394 pp. Institución “Fray Bernardino de Sahagún” Consejo Superior de Investigaciones Científicas (CSIC).
- Mas-Coma, S. & Montoliu, I. 1987. The life cycle of *Dollfusinus frontalis*, a brachylaimid trematode of small mammals (Insectivora and Rodentia). *International Journal for Parasitology*, **17**: 1063–1079.
- Mercadal, B., Villalta, J. F., Obrador, A. & Rosell, J. 1970. Nueva aportación al conocimiento del Cuaternario menorquín. *Acta Geológica Hispanica*, **5**: 89–93.
- Morrondo, M.P. & Manga, M.Y. 1989. Infestación experimental con *Muellerius capillaris* y *Neostromylus linearis* (Nematoda, Protostrongylidae) de algunas especies de moluscos terrestres (Stylommatophora). *Revista Ibérica de Parasitología*, **49**: 233–240.
- Neubert, E. 1998. Annotated checklist of the terrestrial and freshwater molluscs of the Arabian Peninsula with descriptions of new species. *Fauna of Arabia*, **17**: 333–461.
- Ortiz de Zárate López, A. 1991. *Descripción de los moluscos terrestres del valle del Najerilla*. 400 pp. Consejería de Educación, Cultura y Deportes, Gobierno de La Rioja, Logroño.
- Parisi, V. & Gandolfi, G. 1974. Further aspects of the predation by rats on various mollusc species. *Bollettino Zoologico*, **41**: 87–106.
- Pfeiffer, L. 1841–1842. *Symbolae ad Historiam heliceorum*. 88, 147, 100 pp. Fisher, Cassel [= Kassel].
- Pfeiffer, L. 1848. *Monographia heliceorum viventium. Sistens descriptiones systematicas et criticas omnium huius familiae generum et specierum hodie cognitarum*, vol. 1. xxxii, 484 pp. Brockhaus, Lipsiae [= Leipzig].
- Pilsbry, H.A. 1940. *Land Mollusca of North America north of Mexico. Volume I. Part 1*. 1–574 pp. Academy of Natural Sciences, Philadelphia.
- Pilsbry, H.A. 1948. *Land Mollusca of North America (north of Mexico). Volume II. Part 2*. xlvii, 521–1113 pp. Academy of Natural Sciences, Philadelphia.
- Renoux, G. & Quatrefarges, H. 1951. The escape of *Brucella melitensis* Meyer and Shaw, from experimentally infected snails, *H. (Cryptomphalus) aspersa* Müller. *Revue de Pathologie Comparée*, **51**(632): 82–84.
- Riedl-Dorn, C. 1999. The natural history collections in Vienna's Naturhistorisches Museum. *Cahiers d'Étude / Study series ICOM*, **7**: 3–5.
- Robinson, D.G. 2001. Invasive snails: deliberate introductions. P. 13, in Seeno, T.N. & Eichlin, T.D., (Eds.), *Annual Report, Plant Pest Diagnostics Branch*. California Department of Food & Agriculture, Sacramento.
- Scarabino, F. 2003. Lista sistemática de los Gastropoda terrestres vivientes de Uruguay. *Comunicaciones de la Sociedad Malacológica del Uruguay*, **8**: 203–214.

- Schileyko, A.A. 2006. Treatise on Recent terrestrial pulmonate molluscs. Part 13: Helicidae, Pleurodontidae, Polygyridae, Ammonitellidae, Oreohelicidae, Thysanophoridae. *Ruthenica, Supplement*, 2(10): 1765–1906.
- Sparks, B.W. 1952. Notes on some Pleistocene sections at Barrington, Cambridgeshire. *Geological Magazine*, 89: 163–174.
- Sverlova, N.V. 2006. O rasprostraneniі nekotorykh vidov nazemnykh mollyuskov na territorii Ukrainy. *Ruthenica*, 16: 119–139.
- Sysoev, A. & Schileyko, A. 2009. *Land snails and slugs of Russia and adjacent countries*. 312 pp. Sofia, Pensoft.
- Taylor, J.W. 1910–1911. Monograph of *Helix aspersa*. In: *Monograph of the land and freshwater Mollusca of the British Isles*, 3(17): 236–272, pls. 23–24.
- Tribó M.J., Serra Balrich, E., Asín, M. & Camarasa, J.G. 1999. Evaluación de la eficacia antiarrugas y reafirmante de un producto a base de *Cryptomphalus aspersa* en el tratamiento del fotoenvejecimiento cutáneo. *Dermatología Cosmética*, 9: 18–24.
- Turner, H., Kuiper, J.G.J., Thew, N., Bernasconi, R., Rüetschi, J., Wüthrich, M. & Gosteli, M. 1998. Mollusca. Atlas. *Fauna Helvetica*, 2: 1–527. Centre Suisse pour la Cartographie de la Faune (SSCF/SZKF) & Schweizerische Entomologische Gesellschaft (SES/SEG), Neuchâtel.
- Webb, G.R. 1943. The mating of the Landsnail *Haplotrema concavum* (Say). *American Midland Naturalist*, 30: 341–345.
- Yildirim, M.Z., Kebapçı, Ü. & Gümüş, B.A. 2004. Edible snails (terrestrial) of Turkey. *Turkish Journal of Zoology*, 28: 329–335.

Comments on the proposed precedence of *Maculinea* van Eecke, 1915 over *Phengaris* Doherty, 1891 (Lepidoptera, LYCAENIDAE)

(Case 3508: see BZN 67: 129–132, 245, 315–319)

(1) M.G. Morris, M.V.L. Barclay and D. Agassiz

Department of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

(e-mail: m.morris@nhm.ac.uk, m.barclay@nhm.ac.uk)

We support the application by Balletto et al. (BZN 67: 129) to give precedence to *Maculinea* van Eecke, 1915 over *Phengaris* Doherty, 1891. The three main grounds are: (i) The importance to a wide range of users of the *Maculinea* butterfly-ant interactions that have been the subject of many recent papers in important biological journals and in which the generic name *Maculinea* has almost always been employed; (ii) The almost universal use of the generic name *Maculinea* for several butterfly species of considerable importance to conservationists; (iii) Protection of the stability of an animal name in use by numerous non-taxonomist stakeholders, whose opinion of, and respect for, zoological nomenclature and taxonomy in general may depend on the stability of just a few familiar names.

In arguing against the application, Fric et al. (BZN 67: 315) remarked that the authors of Case 3508 ‘fail to provide a taxonomically feasible way to preserve the name *Maculinea*’. However, there is no known taxonomic impediment to a straightforward application to plenary power to give precedence to *Maculinea* over *Phengaris*.

Fric et al. also gave a detailed account of the nomenclatural history of the *Maculinea* butterflies, but, with the exception of the idiosyncratic action of Nässig

(1995) in synonymising *Maculinea* with *Glaucopsyche*, most of the detail relates to the period roughly up to the middle of the twentieth century. More recent work has seen *Maculinea* used in a majority of cases, particularly in the biological, evolutionary and conservation literature (as opposed to the strictly taxonomic). We do not agree with Fric et al.'s dismissal of the significance of prevailing usage in field guides, distribution atlases and other publications that they consider not to be of 'major scientific importance' (p. 315). On the contrary, the taxonomic community is by definition the most likely to understand and accept nomenclatural change, and it is the much larger non-taxonomic user base and their needs that the principle of stability seeks to protect. Recent experience has shown (e.g. Vane-Wright, 2011) that many non-taxonomic users are increasingly using alternative 'vernacular' nomenclatures (that lack the advantage of universality) and moving away from the use of scientific nomenclature, which is popularly perceived as legalistic, complicated and unstable. Any changes in the names of well-known organisms serve to reinforce this undesirable trend. For example, the recent uptake of *Phengaris* by some specialists and the continued use of *Maculinea* by others may be resulting in more use of the vernacular name 'Large Blue' (meaningless or misleading outside the U.K.) in recent British conservation literature. Furthermore, if Balletto et al. (2010) were to be unsuccessful, conservationists and ecologists, especially, are likely to continue to employ *Maculinea*. This would have the effect of dividing nomenclature into 'official' and 'practical' usages with detriment to the perception of the Code and Zoological Nomenclature among non-taxonomic communities.

Additional references

- Nässig, W. 1995. Die Tagfalter der Bundesrepublik Deutschland: Vorschlag für ein modernes, phylogenetisch orientiertes Artenverzeichnis (kommentierte Checkliste). *Entomologische Nachrichten und Berichte*, **39**: 1–28.
- Vane-Wright, R.I. 2011. ICZN – an increasing concern for zoological nomenclature? *Antenna*, **35**: 114–117.

(2) David Agassiz

Department of Entomology, The Natural History Museum, Cromwell Road,
London SW7 5BD, U.K.
(email: d.agassiz@nhm.ac.uk)

I would like to support the proposal to conserve the name *Maculinea* as this genus of butterflies is so important, not just for Lepidoptera taxonomy but on account of its interest in myrmicophily among LYCAENIDAE.

Comments on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*; Reptilia, Testudines)

(Case 3463; see BZN 66: 34–50, 80–87, 169–186, 274–290, 352–357; 67: 71–90, 170–178, 246–254, 319–331; 68: 72–77, 140–143)

(1) Anthony Cheke

139 Hurst Street, Oxford OX4 1HE, U.K.

(e-mail: anthony.cheke@dodobooks.com)

Frazier & Matyot (2010; BZN 68: 140–143) have attempted to sideline the putative lectotype of the Aldabra tortoise, the Leiden specimen collected by Dussumier, by arguing that it cannot be considered suitable as its provenance is uncertain on both historical and genotypic (DNA) grounds. In relation to the correct name for the species in question, there are two issues they have not considered.

1. If they are correct that the uncertain provenance of RMNH 3231 makes this specimen an unsuitable lectotype, it follows that the next available name, i.e. *Testudo elephantina* Duméril & Bibron, 1835 should be (re-)adopted, its type locality restricted to Aldabra by Günther in 1877 (see Bour & Pritchard, BZN 66: 169–174, 2009). Their arguments provide no support for, nor have they any bearing on, the conservation and continued use of *Testudo gigantea* Schweigger, 1812 for the Aldabra tortoise, a move Frazier himself initiated. That decision depends entirely on the status of a quite different specimen, MNHN 9554, and the Commission's verdict on that, as discussed in numerous previous submissions in relation to this case.

In that context it should be noted that quite recently a Portuguese scholar, Luis Ceriáco, examined MNHN 9554 in connection with a study on the surviving specimens from the former 'Cabinet d'Ajuda' in Lisbon. He concluded that this tortoise is clearly stuffed in the manner used for large specimens in that establishment at the end of the 18th century (Roger Bour, pers. comm. 13 September 2011). This is a new element adding to the already very strong evidence that this specimen is the very Brazilian tortoise 'e collectione regia Libonensi' described by Schweigger in 1812 as *Testudo gigantea*.

It is certainly unfortunate when the rediscovery or re-identification of a type transfers a familiar name to a different species, but as I and others have commented before (e.g. BZN 67(1):79–81), the same process with the Galapagos tortoises, equally iconic, did not incur the extraordinary reaction (and polarisation) that has been spawned by Case 3463, nor indeed any of world-wide confusion predicted for the Aldabra case. Why are people prepared readily to lose the equally long-established *elephantopus* but are yet so attached to *gigantea*?

2. The fact that a type specimen was collected in an area where it is not native is not *per se* an impediment to its use in nomenclature, as Frazier & Matyot imply, even if they do not say so outright. Indeed another well-known Indian Ocean tortoise *Astrochelys yniphora*, a Madagascar endemic, was originally described from a specimen traded into and collected on Grande Comore/Ngazidja (Bour, 2007). Another Indian Ocean example is that of the small bird *Lonchura striata* (Linnaeus, 1766), a native of India and south-east Asia, which was first collected in the island of Réunion to which it had been introduced (e.g. Cheke, 2009). Hence the collection locality of the type (e.g. Grande Comore, Réunion) need not reflect the true natural

range of the species (e.g. Madagascar, India etc.). However as there are several recognised races of the bird, the Réunion specimen had at some later time to be assigned, by matching to other populations, to a source locality, Ceylon, (Baker, 1926) to create a nominate race (although Stuart Baker restricted the type locality to Ceylon/Sri Lanka, the range of the subspecies extends throughout southern India, and the birds introduced to Réunion probably originated in the French trading post at Pondicherry on the Tamil coast south of Madras/Chennai). The same issue applies to the lectotype of *Testudo dussumieri*. The Code specifies how to treat a specimen from outside its natural range, including an introduced self-sustaining or captive-breeding population: Article 76.1.1 states that 'If capture or collection occurred after transport by artificial means, the type locality is the place from which the name-bearing type, or its wild progenitor, began its unnatural journey'. Thus, in full accordance with the Code, it is entirely in order for the type of an Aldabra tortoise to have the granitic Seychelles, Mauritius or Réunion as its collection locality, counter-intuitive as this may seem. Some early types inevitably have no unequivocal collection locality at all.

As I have argued previously (BZN 67: 79–81), in a pertinent note Frazier & Matyot conspicuously failed to cite in their BZN review, it is highly probable that an Aldabra/Seychelles tortoise collected on either the granitic Seychelles or the Mascarenes in the mid-1820s would have come from Aldabra, and Frazier & Matyot are somewhat selective in their choice of sources to imply an equal likelihood of it being a native of the granitic Seychelles. Although native Seychelles animals were still being exported in 1807, as Frazier & Matyot (2010) note, by 1815, as I pointed out, Aldabran animals were being imported into the granitics in large numbers precisely because the native tortoises had become too scarce to be worth hunting (full references in my earlier note). It should be remembered that these animals were commercially transported to be sold and eaten, not as pets to be kept and nurtured for years, so earlier imports from the granitics would mostly have been consumed. At ca. 3 years old RMNH 3231, probably collected ca. 1825, would have hatched around 1822–3 at the earliest, and hence is unlikely to have originated in the granitics, although another, smaller, juvenile Dussumier collected (MNHN 1942), stated as being from the Seychelles by Duméril & Bibron, is considered somewhat tentatively to be a granitic native by Bour (2006 & refs. therein) and firmly assigned there with no additional identification evidence by Frazier & Matyot (2010); DNA extraction failed on this specimen (Austin et al., 2003). Frazier & Matyot also failed to acknowledge, as I also pointed out, that the locals on the recipient islands were then fully aware of the provenance of animals being imported (their origin advertised in sales), and Dussumier would certainly have been told where his specimen originated. Hence, whatever Temminck's occasional shortcomings on provenance, that is not an *a priori* reason to disbelieve his and Schlegel's designation in this specific case. As I have said previously (BZN 67: 79–81) 'why invent the then extremely obscure (to Europeans) locality of Aldabra if there was no reason to do so?' - the obvious inference is that at the time of transfer to Leiden the Paris museum had information directly from Dussumier that Aldabra was the (ultimate) origin of this specimen.

Frazier & Matyot (2010) profess to being amazed that I should suggest it, but the fact that RMNH 3231 cannot be assigned to one or other source on its mtDNA or

(according to them) on morphology is of no importance at the level of species, as animals from both groups of islands are considered by almost everyone to be conspecific (e.g. Austin et al., 2003). Hence, since most authors are agreed that the specimen is of the species native to both Aldabra and the granitic Seychelles, it is perfectly proper to use it as the lectotype, despite its actual provenance being uncertain. Given that some authors split the species into Aldabra and granitic Seychelles forms (as subspecies) and a handful consider them species, it does become necessary either to restrict *dussumieri* to one or other group of islands as original source (irrespective of where it was collected), or invalidate it (which would take us back to *T. elephantina* for Aldabra animals). Recent study of juveniles of the three existing morphotypes (Aldabra and two presumed to be from the granitic islands), reared in identical conditions (Gerlach & Bour, 2003; Gerlach, 2011), shows that they are statistically distinguishable, and most can be separated individually. RMNH 3231, a juvenile of straight carapace length 119 mm (Bour & Pritchard, unpublished; see photo with scale in Grünewald, 2009), is considered to be a juvenile Aldabra tortoise by the only three herpetologists who have personally studied the specimen, Bour, Pritchard & Hoogmoed (Hoogmoed et al., 2010; further supporting references in BZN 67: 79–81). Furthermore its body co-ordinates, using Gerlach's (2011) analysis, closely fit the Aldabra morphotype, not those presumed to be from the granitic islands. A figure showing RMNH's coordinates superimposed on Gerlach's (2011) figures for living tortoises is available from the author. Its co-ordinates are well within the 95% envelope for dorsal and lateral growth patterns, and only just outside for the plastral pattern, for which in any case the morphotypes are not clearly separable until reaching the 31–40 cm size range (Gerlach, 2011). Given the tradition that the specimen came from Aldabra, the long-standing morphological support for that view from those who have studied it, and with particular emphasis on the additional morpho-statistical evidence, I formally propose that the type locality of *Testudo dussumieri* Gray, 1831, represented by the lectotype in Leiden, RMNH 3231, be restricted to the Aldabra atoll. The specimen is fully illustrated with all labels by Grünewald (2009).

A further point is that the fact that the mtDNA haplotype exhibited by RMNH 3231 is not currently found on Aldabra proves nothing. The animal was collected long before the late 19th century bottleneck when the population was close to extinction (Stoddart & Peake, 1979; Bourn et al., 1999) which could have caused the loss of haplotypes (as already noted by Palkovacs et al., 2003). Furthermore it could easily have come from an island (Polymnie, Picard [later re-introduced]) where tortoises, and thus possibly some haplotypes, were wiped out entirely. Frazier & Matyot did not mention that Austin et al. (2003) found 3 other individuals with haplotypes 1–4 substitutions adrift from the majority, 2 alive in the Seychelles (and considered by the NPTS (Nature Protection Trust of Seychelles) to be granitic natives), and one labelled 'Aldabra' in the London Natural History Museum. Although the 'B' haplotype is unique, so are the 'C', 'D' and 'E' examples, thus reducing the significance of the small (2 substitutions) difference seen in RMNH 3231. Balmer et al. (2011), studying the genetic variation in tortoises on Aldabra, did not apply their microsatellite analysis to any museum specimens or to living animals thought to originate in the granitic islands, though previous work (Palkovacs et al., 2003) suggests variation is minimal.

In conclusion, Frazier & Matyot (BZN 68: 140–143) seem to have confused collection locality, type locality and geographical origin. Ideally these should be the same, but with old specimens, of species that were traded around, released and/or bred by humans, they often are not.

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Additional references

- Baker, E.C.S. 1926. *The fauna of British India including Ceylon and Burma. Birds - Vol. III.* xx, 489 pp. Taylor & Francis, London.
- Bour, R. 2006. An unnamed tortoise from the Seychelles Islands. *Emys*, **13**(3): 24–30.
- Bour, R. 2007. The Plowshare tortoise: past, present, and uncertain future. The type of *Testudo yniphora* Vaillant, 1885, with a selected bibliography. *Emys*, **14** (1): 33–46.
- Bourn, D., Gibson, C., Augeri, D., Wilson, C.J., Church, J. & Hay, S.I. 1999. The rise and fall of the Aldabran giant tortoise population. *Proceedings of the Royal Society of London, B Biological Sciences*, **266**: 1091–1100.
- Cheke, A.S. 2009. Data sources for 18th century French encyclopaedists - what they used and omitted: evidence of data lost and ignored from the Mascarene Islands, Indian Ocean. *Journal of the National Museum Praha, Natural History Series*, **177**: 91–117.
- Frazier, J. & Matyot, P. 2010. On the identity of Monsieur Dussumier's Dutch tortoise and the lectotype of *Testudo dussumieri* Gray, 1831. *Zootaxa*, **2665**: 29–50.
- Gerlach, J. & Bour, R. 2003. Morphology of hatchling *Dipsochelys* giant tortoises. *Radiata*, **12**(3): 11–20.
- Gerlach, J. 2011. Development of distinct morphotypes in captive Seychelles–Aldabra giant tortoises. *Chelonian Conservation and Biology*, **10**(1): 102–112.
- Grünewald, F. 2009. Museumcollecties ... RMNH 3231 (*Dipsochelys dussumieri*) Gray, 1831. *Trionyx*, **7**: 136–142.
- Hoogmoed, M.S., Gassó Miracle, M.E. & van den Hoek Ostende, L.W. 2010. Type specimens of recent and fossil Testudines and Crocodylia in the collections of the Netherlands Centre for Biodiversity, Naturalis, Leiden, the Netherlands. *Zoologische Mededelingen, Leiden*, **84**(8): 159–199.
- Palkovacs, E.P., Marschner, M., Ciofi, C., Gerlach, J., & Caccones A. 2003. Are the native giant tortoises from the Seychelles really extinct? A genetic perspective based on mtDNA and microsatellite data. *Molecular Ecology*, **12**: 1403–13.
- Stoddart, D.R. & Peake, J.F. 1979. Historical records of Indian Ocean giant tortoise populations. *Philosophical Transactions of the Royal Society of London, B*, **286**: 147–161.

(2) C. Smeenk

Netherlands Centre for Biodiversity Naturalis (National Museum of Natural History), PO Box 9517, 2300 RA Leiden, The Netherlands
(e-mail: chris.smeenk@ncbnaturalis.nl)

The locality of the lectotype of *Testudo dussumieri* Gray, 1831

The latest comment by Frazier & Matyot (BZN 68: 140–143), in reaction to the preceding one by Hoogmoed (BZN 68: 72–77), cannot go unanswered. The main

point, time and again raised by Frazier & Matyot, is that the locality Aldabra is unreliable and is actually likely to be Mahé, with the argument (p. 140) that ‘There is no evidence that J.-J. Dussumier, considered to be the collector of the lectotype, ever visited Aldabra, but he is definitely known to have made collections on Mahé, in the granitic Seychelles.’ No doubt this is correct, but Dussumier was a merchant, and merchants buy interesting things from interesting places wherever they come across them. Museums all over the world are full of specimens obtained that way, and I can give a great many examples from the Leiden Museum that were received from collectors or travellers who did not visit the localities from where (part of) their material originated. Austin et al. (2003, p. 1421) write, quoting 19th-century references, that tortoises from Aldabra were shipped to the central Seychelles and other islands in those days, often in great numbers (see also Bour et al., BZN 67: 72–73; Cheke, BZN 67: 79–81, and Hoogmoed et al., 2010, p. 176). Even Frazier & Matyot (2010, p. 140) themselves stated that Dussumier was also known to have visited the Mascarene Islands of Mauritius and Ile Bourbon (La Réunion), where thousands of tortoises from the granitic Seychelles, as well as from Aldabra, had been imported; they confirm this on p. 142. So the fact that Dussumier himself never visited Aldabra cannot be put forward as an argument against the recorded provenance of this tortoise. Strangely, whereas Frazier in his letter to me of 7 July admits that ‘We have never said that it is impossible that Dussumier somehow (perhaps by trade, perhaps by purchase, perhaps by exchange?) obtained a tortoise from Aldabra’, the authors again ignore this obvious explanation in their latest comment, just saying (p. 141) that ‘there is no mention of any Dussumier tortoise from Aldabra’. In Leiden there is, disqualified as it may be by Frazier & Matyot.

These authors elaborate on three points: the very brief description by Gray (1831b) which they call (p. 141) ‘confused for many reasons’, the absence of an original label, and the data published by Schlegel in Temminck & Schlegel (1834) (see Tschudi, 1838 for Schlegel’s sole authorship) which they mistrust, erroneously quoting Hoogmoed (BZN 68: 74) in saying (p. 141) ‘the source of this is unknown’. I will address each of these subjects.

(1) Gray (1831b). – Gray’s original description is very brief indeed, but not at all ‘confused’. Gray enumerates the species of reptiles known to him, starting with the genus *Testudo* (p. 8), number 1 (p. 9) being ‘*Test. Indica, (Indian Tortoise.)*’. He mentions the specimens seen by him under the names by which they were arranged in the various collections. The Leiden one appears as follows: ‘*Junior. Testa nigra margine laterali angulato, areolis magnis. Test. Dussumieri*, Schlegel MSS. (v. Mus. Leyd.) – Pet. Gaz. t. 76, f. 4.’ (the latter reference does not relate to the Leiden animal); and further: ‘Habitat in India Orientali, Gen. Hardwicke, Insula Mauritiana, Insula Aldebra, M. Dussumiere.’ Gray had not the intention of describing a new species, but referred to a specimen in the Leiden Museum (v. = vide = see) identified by him as *T. indica*, and bearing the manuscript name ‘*T. Dussumieri*’ apparently used by Schlegel, then the Curator of Vertebrates and the herpetologist of the Leiden Museum. These manuscript notes (MSS being plural) could have been labels or any other written records relating to the specimen.

(2) Labels. – Regarding the lack of an original label: in the great majority of collections from the early 19th century, very few original labels (if there were any; data were often provided in the form of letters or other notes) have been preserved,

and the Leiden Museum is no exception, unfortunately. Regarding alcohol specimens: many labels in jars faded with time, so had to be copied for that reason alone, or were glued to the outside of jars and could not be replaced when specimens were rearranged. New labels would bear the scientific names then in use, and in most cases did not repeat manuscript names that had become obsolete. This explains why the name *Testudo Dussumieri* was not entered onto the oldest label of this tortoise that still exists; in the meantime, both Gray and Schlegel had identified the specimen as *T. indica*. The same holds true for the first record in the museum's written catalogue, which was composed much later.

(3) Schlegel (1834). – A few years after Gray's (1831b) synopsis, the locality of this tortoise was specified by Schlegel, in the reptile volume of the *Fauna Japonica* edited by Temminck & Schlegel; the section on chelonians (pp. 1–80) was published in January 1834, see Holthuis & Sakai (1970, p. 75). Following Gray, Schlegel too, included the specimen in *Testudo indica*: 'This institution has received another very young individual from the Paris Museum, communicated under the name of Test. Dussumieri, brought back by the traveller whose name it bears, from the island of Aldebra, situated in the north of the Mozambique Channel.' (transl. from French). This is in line with Gray's reference to the manuscript name '*T. Dussumieri*' – even the spelling 'Aldebra' is the same. This text may be regarded as relatively good provenance for the specimen and support for the view that these data are genuine and had been provided by Paris, along with the accompanying manuscript name. Frazier & Matyot conclude (p. 141): 'As Hoogmoed explained (BZN 68: 74 and following pages), it is unknown on what Temminck & Schlegel based this statement', and further on: 'The basis for his assertion now rests on Temminck & Schlegel's (1834) above-quoted statement, although Hoogmoed acknowledges that the source of this is unknown'. This is a misquotation. On the contrary, Hoogmoed says (p. 74): 'Temminck & Schlegel (1834) made the published, printed statement about name, collector, locality and specimen on the basis of documentation (in whichever form) they had received from Paris with the specimen concerned', i.e. the information had been 'communicated' by the Paris Museum with the specimen in the form of a label or some other document.

The identity of the lectotype of *Testudo dussumieri* (Gray, 1831)

Frazier & Matyot did not check the identity of RMNH 3231 themselves, either by studying the animal or by asking another herpetologist to provide a clear description, measurements and photographs. The tortoise has been studied by several herpetologists, professionals and knowledgeable amateurs, in recent years R. Bour, P.C.H. Pritchard, M.S. Hoogmoed and F. Grünewald. They have all independently identified it as an Aldabra tortoise; see Grünewald (BZN 67: 178) and Hoogmoed (BZN 68: 72). Excellent colour photographs have appeared in various publications, e.g. Gerlach (2004, p. 68) in a book reviewed by Frazier (2006b, p. 370 – 'The photographs of rarely seen type specimens are valuable') and Grünewald (2009, p. 137–138) who gives four photographs showing measurement scales. Frazier & Matyot have not criticized the findings of these authors, nor discussed the distinguishing characters used, and not commented on the published photographs. It is a young animal; even if this might be difficult to distinguish from similar specimens

from other islands, that should be clearly stated and discussed. For want of any morphological evidence to the contrary, there is no reason to doubt the identifications by these herpetologists.

Finally, there are the genetic studies (Austin et al., 2003; Balmer et al., 2010) which have proved inconclusive. Frazier & Matyot (2010, p. 143) rightly conclude that ‘the taxonomic identity of the lectotype remains unresolved’; i.e. as far as genetic studies are concerned.

Conclusions

In their paper and comments, Frazier & Matyot reiterate that the provenance of RMNH 3231 is ‘uncertain’, but this uncertainty results from disbelieving the data accompanying the specimen. With so much uncertainty surrounding the lectotype, in their opinion the name *Testudo dussumieri* Gray, 1831 should really be suppressed. Whatever arguments there may be in favour of that on other grounds, any possible doubt concerning the provenance of the lectotype is not a sufficient reason.

Additional references

- Balmer, O., Ciofi, C., Galbraith, D.A., Swingland, I.R., Zug, G.R. & Caccone, A. 2010. Population genetic structure of Aldabra giant tortoises. *Journal of Heredity*, Advance Access August 30, 2010: 1–9.
- Frazier, J. & Matyot, P. 2010. On the identity of Monsieur Dussumier’s Dutch tortoise and the lectotype of *Testudo dussumieri* Gray, 1831. *Zootaxa*, **2665**: 29–50.
- Gerlach, J. 2004. Giant tortoises of the Indian Ocean. The genus *Dipsochelys* inhabiting the Seychelles Islands and the extinct giants of Madagascar and the Mascarenes. *Frankfurter Beiträge zur Naturkunde/Frankfurt Contributions to Natural History*, **21**: 1–207. Edition Chimaira, Frankfurt am Main.
- Grünewald, F. 2009. Museumcollecties. RMNH 3231 (*Dipsochelys dussumieri*) Gray, 1831. *Trionyx*, **7**: 136–142.
- Holthuis, L.B. & Sakai, T. 1970. Ph. *F. von Siebold and Fauna Japonica. A history of early Japanese zoology*. 323 pp. Academic Press of Japan, Tokyo.
- Hoogmoed, M.S., Gassó Miracle, M.E. & van den Hoek Ostende, L.W. 2010. Type specimens of recent and fossil Testudines and Crocodylia in the collections of the Netherlands Centre for Biodiversity Naturalis, Leiden, the Netherlands. *Zoologische Mededelingen Leiden*, **84**: 159–199.
- Smeenk, C. 2009. Has one of Captain Cook’s possums landed in Leiden? The possible holotype of *Pseudocheirus peregrinus* (Boddaert, 1785). *Zoologische Mededelingen Leiden*, **83**: 723–740.
- Temminck, C.J. 1821. Calao à casque sillonné. *Buceros sulcatus*. Temm. In: Temminck, C.J. & Le Baron Meiffren Laugier de Chartrouse (Eds.), *Nouveau recueil de planches coloriées d’oiseaux, pour servir de suite et de complément aux planches enluminées de Buffon.*, Vol. 2. 2 pp., 1 pl. [unnumbered]. F.G. Levrault, Paris/Strasbourg & Legras Imbert & Comp., Amsterdam.
- Temminck, C.J. 1824. Première monographie. Sur le genre Phalanger. – *Phalangista*. (Geoff.) (1). In: *Monographies de mammalogie, ou description de quelques genres de mammifères, dont les espèces ont été observées dans les différents musées de l’Europe*. Tome premier: 1–20, pls I–IV. G. Dufour & Ed. D’Ocagne, Paris/Amsterdam.
- Schlegel, H. 1834. Les chéloniens. In: Temminck, C.J. & Schlegel, H. (Eds.), *Fauna Japonica auctore Ph. Fr. de Siebold. Reptilia elaborantibus C.J. Temminck et H. Schlegel*. 80 pp., 9 pls. J.G. Lalau, Lugduni Batavorum.
- Tschudi, J.J. 1838. Classification der Batrachier, mit Berücksichtigung der fossilen Thiere dieser Abtheilung der Reptilien. *Mémoires de la Société des Sciences Naturelles de Neuchâtel*, **2**: 1–99, pls 1–6.

OPINION 2286 (Case 3509)***Cetonia squamosa* Gory & Percheron, 1833 (currently *Aethiessa squamosa*; Insecta, Coleoptera): specific name conserved**

Abstract. The Commission has conserved the specific name *Cetonia squamosa* Gory & Percheron, 1833 by ruling that it is not invalid by reason of being a junior homonym of *C. squamosa* Lefebvre, 1827 (currently *Protaetia (Netocia) squamosa*, also CETONIIDAE), endemic in southern Italy including Sicily.

Keywords. Nomenclature; taxonomy; CETONIIDAE; *Protaetia squamosa*; *Aethiessa squamosa*; flower chafers; Southern Italy; Sicily; North Africa.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *squamosa* Gory & Percheron, 1833, as published in the binomen *Cetonia squamosa*, is not invalid by reason of being a junior primary homonym of *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*;
 - (b) *squamosa* Gory & Percheron, 1833, as published in the binomen *Cetonia squamosa*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*, as ruled in (1) above.

History of Case 3509

An application to conserve the specific name *Cetonia squamosa* Gory & Percheron, 1833 by ruling that it is not invalid by reason of being a junior homonym of *C. squamosa* Lefebvre, 1827 (currently *Protaetia (Netocia) squamosa*, also CETONIIDAE, endemic in southern Italy including Sicily) was received from Ignazio Sparacio (*Palermo, Italy*) on 30 November 2009. After correspondence the case was published in BZN 67: 133–136 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 134. At the close of the voting period on 1 September 2011 the votes were as follows:

Affirmative votes – 23: Ballerio, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Kullander, Krell, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Bouchet.

Alonso-Zarazaga, Lim, Pyle and Štys were on leave of absence.

Voting FOR, Ng said he felt that the proposed action would cause the least disruptions overall.

Voting AGAINST, Bouchet said the application (para. 3) indicated that there was a very limited usage of the names involved, and he favoured a strict application of Article 60.3.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

squamosa, *Cetonia*, Gory & Percheron, 1833, *Monographie des Cétoines et genres voisins, formant, dans les familles naturelles de Latreille, la division des Scarabées Méliophiles*. 403 pp. Baillière, Paris, pp. 60, 232.

squamosa, *Cetonia*, Lefebvre, 1827, *Mémoires de la Société Linnéenne de Paris*, 6: 103.

OPINION 2287 (Case 3513)***Chaetosoma* Westwood, 1851, *Apodasya* Pascoe, 1863 and
CHAETOSOMATIDAE Crowson, 1952 (Insecta, Coleoptera): usage
conserved**

Abstract. The Commission has conserved usage of the junior homonym *Chaetosoma* Westwood, 1851 and of the junior synonym *Apodasya* Pascoe, 1863 over the newly discovered older name *Chaetosoma* Chevrolat, 1843. In addition, the Commission has also conserved the beetle family-group name CHAETOSOMATIDAE Crowson, 1952 by suppressing the older but permanently invalid nematode name CHAETOSOMATIDAE Claus, 1872.

Keywords. Nomenclature; taxonomy; Coleoptera; Cucujiformia; CHAETOSOMATIDAE; *Chaetosoma*; *Apodasya*; *Chaetosoma pilosum*; *Chaetosoma scaritides*.

Ruling

- (1) Under the plenary power it is hereby ruled that the following names are suppressed for both the Principle of Priority and the Principle of Homonymy:
 - (a) the generic name *Chaetosoma* Chevrolat, 1843;
 - (b) the family-group name CHAETOSOMATIDAE Claus, 1872 (originally proposed as CHAETOSOMIDAE).
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Chaetosoma* Westwood, 1851 (gender: neuter), type species by monotypy *Chaetosoma scaritides* Westwood, 1851 (Insecta, Coleoptera);
 - (b) *Apodasya* Pascoe, 1863 (gender: feminine), type species by original designation *Apodasya pilosa* Pascoe, 1863 (a junior subjective synonym of *Chaetosoma pilosum* Chevrolat, 1843) (Insecta, Coleoptera).
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *scaritides* Westwood, 1851, as published in the binomen *Chaetosoma scaritides* (specific name of the type species of *Chaetosoma* Westwood, 1851);
 - (b) *pilosum* Chevrolat, 1843, as published in the binomen *Chaetosoma pilosum* (valid specific name of the type species of *Apodasya* Pascoe, 1863).
- (4) The name CHAETOSOMATIDAE Crowson, 1952, type genus *Chaetosoma* Westwood, 1851 is hereby placed on the Official List of Family-Group Names in Zoology (Insecta, Coleoptera).
- (5) The name *Chaetosoma* Chevrolat, 1843 (gender: neuter), type species by monotypy *Chaetosoma pilosum* Chevrolat, 1843, as suppressed in (1)(a) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.
- (6) The name CHAETOSOMATIDAE Claus, 1872 (originally published as CHAETOSOMIDAE), type genus *Chaetosoma* Claparède, 1863, as suppressed in (1)(b) above,

is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology (Nematoda).

History of Case 3513

An application to maintain usage of the junior homonym *Chaetosoma* Westwood, 1851 and of the junior synonym *Apodasya* Pascoe, 1863 over the newly discovered older name *Chaetosoma* Chevrolat, 1843, and conserve the beetle family-group name CHAETOSOMATIDAE Crowson, 1952 by suppressing the older but permanently invalid nematode name CHAETOSOMATIDAE Claus, 1872, was received from Yves Bousquet and Patrice Bouchard (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*) on 1 February 2010. After correspondence the case was published in BZN 67: 140–144 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 142. At the close of the voting period on 1 September 2011 the votes were as follows:

Affirmative votes – 21: Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kojima, Krell, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Grygier, Kottelat and Kullander.

Alonso-Zarazaga, Lim, Pyle and Štys were on leave of absence.

Voting FOR, Yanega expressed his view that simply because a taxon was not the subject of large numbers of publications does not mean it should automatically lose its standing in the face of extremely old names that have been completely forgotten (in this case, for 167 years). He felt that in this situation it should be even more so, given that a family-level name in fairly wide use is involved. Also voting FOR, Ng said that the proposals appeared to be the most parsimonious way to resolve this problem.

Voting AGAINST, Grygier said he thought that there are too few species involved in this case, none of which claimed wider interest or significance, to warrant overturning priority to conserve their genera and family: just one species of Westwood's *Chaetosoma* and three species of *Apodasya*, and only ten species currently placed in Crowson's CHAETOSOMATIDAE. Also voting AGAINST, Kullander pointed out that this case used the option in Article 23.9.3. Prevailing usage under 23.9 did not apply. However, he felt that the application did not convincingly demonstrate how the senior synonym would 'threaten stability or universality or cause confusion'. He saw this as no worse than a taxonomic move from one genus to another. He preferred that the case of the family group name homonymy should be addressed in a new application depending on the outcome of the present voting round.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- Apodasya* Pascoe, 1863, *The Journal of Entomology*, **2**:54.
- Chaetosoma* Chevrolat, 1843, *Dictionnaire universel d'histoire naturelle ... Tome troisième*. [Livraisons 30–36]. MM. Renard, Martinet et Cie., Paris, p. 367.
- Chaetosoma* Westwood, 1851, *The Transactions of the Entomological Society of London*, (New Series), **1**: 171.
- CHAETOSOMATIDAE Claus, 1872, *Grundzüge der Zoologie. Zum Gebrauche an Universitäten und Höheren Lehranstalten sowie zum Selbststudium. Zweite vermehrte Auflage*. N.G. Elwert, Marburg & Leipzig, p. 312.
- CHAETOSOMATIDAE Crowson, 1952, *The Entomologists Monthly Magazine*, **88**: 66.
- pilosum*, *Chaetosoma*, Chevrolat, 1843, *Dictionnaire universel d'histoire naturelle ... Tome troisième*. [Livraisons 30–36]. MM. Renard, Martinet et Cie., Paris, p. 367.
- scaritides*, *Chaetosoma*, Westwood, 1851, *The Transactions of the Entomological Society of London*, (New Series), **1**: 172.

OPINION 2288 (Case 3517)

LATRIDIIDAE Erichson, 1842 (Insecta, Coleoptera): precedence given over CORTICARIIDAE Curtis, 1829, and *Corticaria* Marsham, 1802: usage conserved by designation of *Corticaria ferruginea* Marsham, 1802 as the type species

Abstract. The Commission has conserved the usage of the family name LATRIDIIDAE Erichson, 1842 by giving it precedence over the senior name CORTICARIIDAE Curtis, 1829, and conserved the current usage of the widely used name *Corticaria* Marsham, 1802 by designation of *Corticaria ferruginea* Marsham, 1802 as the type species.

Keywords. Nomenclature; taxonomy; Coleoptera; CUCUJOIDEA; LATRIDIIDAE; LATRIDIIDAE; CORTICARIIDAE; *Corticaria*; *Lathridius*; *Latridius*; *Corticaria ferruginea*.

Ruling

- (1) Under the plenary power it is hereby ruled that:
 - (a) the family-group name LATRIDIIDAE Erichson, 1842 and other family-group names based on *Latridius* Herbst, 1793 are to be given precedence over CORTICARIIDAE Curtis, 1829 and other family-group names based on *Corticaria* Marsham, 1802 whenever their type genera are placed in the same family-group taxon;
 - (b) all type species designations for *Corticaria* Marsham, 1802 prior to that of *Corticaria ferruginea* Marsham, 1802 by Dajoz (1975) are hereby set aside.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Latridius* Herbst, 1793 (gender: masculine), type species by subsequent designation by Latreille (1810) *Latridius porcatus* Herbst, 1793;
 - (b) *Corticaria* Marsham, 1802 (gender: feminine), type species by subsequent designation of Dajoz (1975) *Corticaria ferruginea* Marsham, 1802, as ruled in (1) above.
- (3) The name *ferruginea* Marsham, 1802, as published in the binomen *Corticaria ferruginea* (specific name of the type species of *Corticaria* Marsham, 1802), is hereby placed on the Official List of Specific Names in Zoology.
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) CORTICARIIDAE Curtis, 1829, type genus *Corticaria* Marsham, 1802, with the endorsement that it and other family-group names based on *Corticaria* are not to be given priority over LATRIDIIDAE Erichson, 1842 and other family-group names based on *Latridius* Herbst, 1793 whenever their type genera are placed in the same family-group taxon;
 - (b) LATRIDIIDAE Erichson, 1842, type genus *Latridius* Herbst, 1793, with the endorsement that it and other family-group names based on *Latridius* are to be given precedence over CORTICARIIDAE Curtis, 1829 and other family-

group names based on *Corticaria* Marsham, 1802 whenever their type genera are placed in the same family-group taxon.

- (5) The name LATHRIDIEN Erichson, 1842 (an incorrect original spelling for LATRIDIIDAE Erichson, 1842) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3517

An application to conserve the usage of the CUCUJOIDEA family name LATRIDIIDAE Erichson, 1842 by giving it precedence over the senior name CORTICARIIDAE Curtis, 1829, and to conserve the current usage of the widely used name *Corticaria* Marsham, 1802 by designation of *Corticaria ferruginea* Marsham, 1802 as the type species, was received from Yves Bousquet and Patrice Bouchard (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*) and Nathan P. Lord (*University of New Mexico, Albuquerque, NM, U.S.A.*) on 24 February 2010. After correspondence the case was published in BZN 67(2): 145–150 (2010). The title, abstract and keywords of the case were published on the Commission's website. Five comments in support were published in 67(3): 243–244.

Decision of the Commission

On 1 June 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 147. At the close of the voting period on 1 September 2011 the votes were as follows:

Affirmative votes – 19: Ballerio, Bogutskaya, Brothers, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Fautin, Ng and van Tol.

Split votes were received from Bouchet who voted FOR: 1(b), 2, 3 and 5; AGAINST: 1(a), 4, and Kojima who voted FOR 1(b), 2 and 3 and AGAINST 1(a), 4 and 5.

Alonso-Zarazaga, Lim, Pyle and Štys were on leave of absence.

Voting FOR, Grygier said he objects to the characterization in paragraph 6 of Dajoz's (1967) type species designation for *Corticaria* as 'valid'. Grygier said that until the Commission rules otherwise, it is invalid because it was later than the valid designation by Gozis (1886). He agrees, however, that since the actual type species *Lyctus politus* is now in another genus and another family, stability will be served by replacing it. To his mind, *Dermestes longicornis* would do as well, but he defers to the applicants' preference for *C. ferruginea*. Also voting FOR, Kullander commented that this case used the option in Article 23.9.3. He said it was questionable whether the application convincingly demonstrated how the senior synonym would 'threaten stability or universality or cause confusion', as prevailing usage did not apply. However, because a relative large family is threatened with a name change, he felt that there was indeed here a need for an affirmative vote.

Voting AGAINST, Ng said that he viewed this situation as concerning a senior family name that had been used by people who applied the principle of priority, while the junior name was retained by people who either ignored or were not aware of the

problem. In such a case, he was not convinced that the principle of priority needed to be compromised. As for the proposed changing of the type species, Ng was also not convinced. He felt that while keeping the current type species would change the definition of the genus as currently understood, it should not be a problem for taxonomists and after a few years, the valid concept would be broadly applied.

Bouchet split his vote, and added that the application indicated that the family name CORTICARIIDAE was definitely in use, and thus he voted in favour of priority.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Corticaria Marsham, 1802, *Entomologia Britannica, sistens insecta Britanniae indigena, secundum methodum Linnaeanam disposita. Tomus I. Coleoptera*. Wilks & Taylor, Londini, p. 106.

CORTICARIIDAE originally introduced as CORTICARIDAE Curtis, 1829, *British entomology; being illustrations and descriptions of the genera of insects found in Great Britain and Ireland: containing coloured figures from nature of the most rare and beautiful species, and in many instances of the plants upon which they are found*, vol. 6, London, pl. 283 and unpaginated pages related to pl. 283.

ferruginea, *Corticaria*, Marsham, 1802 *Entomologia Britannica, sistens insecta Britanniae indigena, secundum methodum Linnaeanam disposita. Tomus I. Coleoptera*. Wilks & Taylor, Londini, p. 111.

LATHRIDIEN Erichson, 1842, *Archiv für Naturgeschichte*, 8: 122.

LATRIDIIDAE Erichson, 1842, *Archiv für Naturgeschichte*, 8: 122.

Latridius Herbst, 1793, *Natursystem aller bekannten in- und ausländischen Insekten, als eine Fortsetzung der von Büffonschen Naturgeschichte. Der Käfer. Fünfter Theil. Mit 16 illuminirten Kupfertafeln*. J-N. Joachim Pauli, Berlin, p. 2.

OPINION 2289 (Case 3476)***Dialictus* Robertson, 1902 and *Evylaeus* Robertson, 1902 (Insecta, Hymenoptera): proposed precedence not granted**

Abstract. A request to give the widely used halictine bee generic names *Dialictus* and *Evylaeus*, both proposed by Robertson (1902), precedence over the rarely used but older names *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 whenever either of the former is considered to be a synonym of any of the latter has not been supported by the Commission.

Keywords. Nomenclature; taxonomy; Hymenoptera; HALICTIDAE; *Dialictus*; *Evylaeus*; *Paralictus*; *Hemihalictus*; *Sudila*; *Sphecodogastra*; *Lasioglossum*; *Dialictus anomalus*; *Evylaeus arcuatus*; *Paralictus cephalicus*; *Hemihalictus lustrans*; *Sudila bidentata*; *Sphecodogastra texana*; halictine bees; sweat bees; cosmopolitan.

Ruling

- (1) A request to give precedence to the halictine bee generic names *Dialictus* and *Evylaeus*, both proposed by Robertson (1902), over the older names *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 has not been supported by the Commission.
- (2) No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3476

An application to conserve standard usage of the widely used halictine bee generic names *Dialictus* and *Evylaeus*, both proposed by Robertson in 1902, by giving precedence over the rarely used but older names *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 whenever these names are considered to be synonyms, was received from Jason Gibbs (York University, ON, Canada), John S. Ascher (American Museum of Natural History, New York, NY, U.S.A.) and Laurence Packer (York University, ON, Canada) on 6 October 2008. After correspondence the case was published in BZN 66(2): 147–158 (2009). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case. The Case was originally sent for vote on 1 June 2010 (VP 12). A majority of Commissioners voted FOR the Case (13 For, 10 Against, 1 Split), but it failed to meet the two-thirds majority required for approval. In accordance with the bylaws, the case was sent for a revote, with a modified set of proposals as follows:

The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the names *Dialictus* Robertson, February 1902 and *Evylaeus* Robertson, September 1902 be given priority over *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 whenever either of the former is considered to be a synonym of any of the latter;

- (2) to emend the entry on the Official List of Generic Names in Zoology for the following name: *Dialictus* Robertson, 1902 (gender: masculine) (type species, by original designation and monotypy: *Halictus anomalus* Robertson, 1892), with the endorsement that it is to be given precedence over *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 in addition to *Paralictus* Robertson, 1901, whenever it and any of the other three are considered to be synonyms;
- (3) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Evyllaesus* Robertson, 1902 (gender: masculine), type species by original designation *Halictus arcuatus* Robertson, 1893, with the endorsement that it is to be given precedence over *Hemihalictus* Cockerell, 1897, *Sudila* Cameron, 1898 and *Sphecodogastra* Ashmead, 1899 whenever it and any of the other three are considered to be synonyms;
 - (b) *Hemihalictus* Cockerell, 1897 (gender: masculine) (type species by original designation and monotypy *Panurgus lustrans* Cockerell, 1897), with the endorsement that it is not to be given priority over *Dialictus* Robertson, 1902 or *Evyllaesus* Robertson, 1902 when it is considered to be a synonym of either;
 - (c) *Sudila* Cameron, 1898 (gender: feminine) (type species by designation of Sandhouse, 1943 *Sudila bidentata* Cameron, 1898), with the endorsement that it is not to be given priority over *Dialictus* Robertson, 1902 or *Evyllaesus* Robertson, 1902 when it is considered to be a synonym of either of them;
 - (d) *Sphecodogastra* Ashmead, 1899 (gender: feminine) (type species by monotypy and original designation *Sphecodes texana* Cresson, 1872), with the endorsement that it is not to be given priority over *Dialictus* Robertson, 1902 or *Evyllaesus* Robertson, 1902 when it is considered to be a synonym of either;
- (4) to place on the Official List of Species Names in Zoology the following names:
 - (a) *cinctipes* Provancher, 1888, as published in the binomen *Halictus cinctipes*, senior subjective synonym of *Halictus arcuatus* Robertson, 1893 (valid specific name of the type species of *Evyllaesus* Robertson, 1902);
 - (b) *lustrans* Cockerell, 1897, as published in the binomen *Panurgus lustrans* (specific name of the type species of *Hemihalictus* Cockerell, 1897);
 - (c) *bidentata* Cameron, 1898, as published in the binomen *Sudila bidentata* (specific name of the type species of *Sudila* Cameron, 1898);
 - (d) *texana* Cresson, 1872, as published in the binomen *Halictus texana* (specific name of the type species of *Sphecodogastra* Ashmead, 1899).

Since Case 3476 was published, a revision of the metallic species of *Lasioglossum* (*Dialictus*) in Canada (Hymenoptera, HALICTIDAE, HALICTINI) was published in *Zootaxa*, **2591**: 1–382 (2010).

Decision of the Commission

On 1 June 2011 the members of the Commission were invited to vote on the modified proposals as above (original proposals published in BZN **66**: 154–155). At the close of the voting period on 1 September 2011 the votes were as follows:

Affirmative votes – 13: Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Pape, Papp, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 11: Bogutskaya, Bouchet, Kojima, Kottelat, Kullander, Krell, Lamas, Minelli, Ng, Patterson and van Tol.

Alonso-Zarazaga, Lim, Pyle and Štys were on leave of absence.

Voting AGAINST, Bouchet said he stood with the comments he made on the first round: The proposals offered for vote were, in his opinion, a recipe for long-term nomenclatural instability. In the short term, as all the names involved were in use, application of priority would admittedly disrupt some habits, but then stability will not be impacted by taxonomic opinions. Also voting AGAINST, Kojima commented that with these proposals the authors seemed to support their taxonomic opinions rather than seeking to promote nomenclatural stability. Kullander, voting AGAINST, said this was a very long and complex application. Under item 10 it said that 'Current usage of the names *Dialictus* and *Evylaeus* results in a nomenclatural problem. . .'. Consequently, his impression was that priority should be preferred in a group with dynamic taxonomy. Usage of *Dialictus* seemed limited (122 uses in ISI Web of Knowledge, August 2011), as was that of *Evylaeus* (154 uses). The plethora of subgenera looked less preferable than the older synonyms. Ng, voting AGAINST, said he had originally voted FOR but after talking with more entomologists and re-reading the Case, he was inclined to change his vote. He agreed that the Case was complicated and there were a large number of names involved; but the taxonomy was changing. He did not see clearly how a positive decision by the Commission would be helpful when taxonomy was unresolved and that any vote at this stage was perhaps premature.

No names are placed on the Official Lists or Indexes in this ruling.

Notice of closure of Cases

The following Cases, for which receipts as new applications to the Commission were published though the cases were never published in full, are now closed:

Terebella infundibulum Renier in Meneghini, 1847 (currently *Myxicola infundibulum*; Polychaeta; SABELLIDAE): proposed conservation of the specific name. A.I. Muir & M.E. Petersen (Case 3534; acknowledgement of receipt published in BZN 67: 269).

Nereis coccinea Renier in Meneghini, 1847 (currently *Lumbrineris coccinea*) and *Thalassema scutatum* Renier in Ranzani, 1817 (currently *Sternaspis scutata*; Annelida, Polychaeta): attribution of authorship. A.I. Muir & M.E. Petersen (Case 3535; acknowledgement of receipt published in BZN 67: 269).

Heterohelix (Foraminiferida, HETEROHELICIDAE): proposed suppression. M.D. Georgescu (Case 3545; acknowledgement of receipt published in BZN 68: 2).

Macropsalis fabulosa Phillipps & Grimmett, 1932 (Arachnida, Opiliones, PHALANGIOIDEA): proposed replacement of the neotype. C.K. Taylor & M.S. Harvey (Case 3549; acknowledgement of receipt published in BZN 68: 2).

Orithyia Fabricius, 1798 (Crustacea, Decapoda, Brachyura): proposed precedence over *Orithuja* Weber, 1795. P.K.L. Ng, D. Guinot & P.J.F. Davie (Case 3551; acknowledgement of receipt published in BZN 68: 2).

Protoretepora de Koninck, 1878 (Bryozoa, Fenestrata): proposed designation of *Protoretepora crockfordae* Wyse Jackson, Reid & McKinney, 2011 as the type species. P.N. Wyse Jackson, C.M. Reid & F.K. McKinney (Case 3556; acknowledgement of receipt published in BZN 68: 93).

Archaeopteryx lithographica von Meyer, 1861 (Aves): proposed correction to Opinion 607. J. Mílkovský (Case 3562; acknowledgement of receipt published in BZN 68: 94). This case correcting the page reference for the name *Archaeopteryx lithographica* was received and circulated before the vote as a comment on Case 3390 and included in Opinion 2283 (BZN 68: 230–231).

Best practice in the use of the scientific names of animals: Support for editors of technical journals

David Notton¹, Ellinor Michel², Natalie Dale-Skey², Svetlana Nikolaeva²
& Steven Tracey²

1 Department of Entomology, The Natural History Museum, Cromwell Road, London

2 I.C.Z.N. Secretariat, clo Natural History Museum, Cromwell Road, London, SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk)

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1. Introduction

The International Commission on Zoological Nomenclature, also known as the 'ICZN' and 'the Commission', supports editors of technical journals in applying best practice to zoological nomenclature.

This paper brings together selected topics of relevance to editors based on mentions of editors in the Code and experience of recent enquiries received by the ICZN Secretariat. It is necessarily technical but includes selected examples. Some topics could not be covered in detail but the Commission website has the complete and authoritative text of the 4th edition of the International Code of Zoological Nomenclature, also known as 'the Code', and a selection of FAQs:

What is the remit of the ICZN?; What is the code?; How should zoological names be written?; What are type specimens for?; What is the difference between availability and validity of names?; I think I have a new species, how can I get it named?; If a name is incorrectly spelled, what do I do?; What are the critical works in zoological nomenclature?; Who is the type of *Homo sapiens*?; Is there such thing as 'page priority'?; What is the status of ZooBank and registration?; Selling scientific names; Should I use Phylocode?; What is the status of the ICZN ruling on electronic-only publication of nomenclatural acts?; How can I help the ICZN?

We advise editors to state that nomenclature must follow the 4th edition of the Code (1999) in your instructions to authors. We recommend that you cite the web address of the Commission where the online version of the Code can be accessed: <http://iczn.org>.

Please make enquiries through the Commission's website: <http://iczn.org>.

2. The Commission and the Code

The Commission acts as adviser and arbiter for the zoological community mainly by producing the International Code of Zoological Nomenclature or 'the Code' – the set of rules for the scientific names of animals – and by resolving nomenclatural problems. The main purpose of the Code is to facilitate the communication of scientists by ensuring the stability and universality of zoological names. The introductory sections of the Code are worth reading for a general overview and the rules or 'Articles' of the Code are supplemented by 'Recommendations' which are advisory, not mandatory. Occasionally in specific cases where the precise application of the rules would threaten stability of nomenclature or cause confusion, the Commission has the power to issue rulings, called 'Opinions' or 'Declarations', suspending or modifying the rules in order to resolve the problem.

The Code does not regulate vernacular (common) names, nor does it regulate taxonomists in subjective matters of taxonomic judgement. For example, the choice of which classification is correct for a particular group of animals is entirely a matter for taxonomists.

3. General advice

To ensure effective peer review of taxonomic papers, we recommend that journals include expertise in zoological nomenclature among the editorial board and that this

is considered when selecting reviewers. ICZN Commissioners can be approached to serve on editorial boards; a list of current Commissioners can be found here: <http://iczn.org/commissioners>.

Editors should avoid publishing material which appears to contain any discourtesy, or potentially offensive behaviour, or language (Appendix A: Code of Ethics).

The Code does not yet recognise electronic publication (see section 9 below for more details)

The Commission does not recognise the Phylocode and, to avoid confusion, recommends that the Phylocode is not used for publishing zoological names and nomenclatural acts.

4. Key concepts

Some words used in nomenclature have technical definitions which differ from their everyday meanings; definitions are found in the Glossary of the Code. Key concepts are:

Binominal names – Editors should ensure scientific names of animals are written following the Principle of binominal nomenclature (Article 5) so they can be easily recognised as such. *See section 5 below for more on the format of names.*

Publication – For the purposes of the Code, publication is the issuing of a work: a) as a permanent scientific record; b) obtainable free of charge or by purchase; and c) simultaneously in numerous durable identical copies (Articles 8, 9). Published works have authorship (Chapter 11) and date (Chapter 5). Valid publication is a requirement for the availability of names. Authors, editors or publishers may disclaim their own published works for the purposes of nomenclature (Article 8.3) if they do not wish new names to become available. Establishing publication dates is essential to determine the precedence of names which are synonyms or homonyms. *See below for more details on publication (section 6) and electronic publication (section 9).*

Availability – Taxonomic papers commonly include descriptions of new taxa and the establishment of new names for the newly described taxa. Availability is a status which a name must gain before it is taken into account as a part of zoological nomenclature (Chapter 4). Names that are not available effectively do not exist for the purposes of zoological nomenclature and cannot be used. Names should be unique, unambiguous and universal and formed following precise rules (Formation of names, Chapter 7). Names are based on name-bearing types, the objective standard of reference for the application of scientific names of animals (Chapter 16). *See section 7 below for more details on availability and the publication of new names.*

Nomenclatural Acts – Published acts which affect the nomenclatural status of a scientific name or the typification of a nominal taxon.

5. Format of names – how to write names correctly

Standard formats for names

- Following the Principle of Binominal Nomenclature (i.e. composed of two names) a species name or 'binomen' is a combination of a genus name (such as *Apis*) and a specific name (such as *mellifera*). The genus name is first, and must start with an upper-case letter, the specific name second, starting with a lower-case letter (Article 28; Appendix B.6). This shows the hierarchy between

genus and species; a genus may include a number of different species. A subspecies name follows the specific name of the species. A subgenus name is placed in parentheses between the name of the genus and the specific name.

- Citing the author and date of publication is optional but often advisable (Article 51) and is added after the binominal name – *Apis mellifera* Linnaeus, 1758. This helps to avoid confusion between similar names and allows readers to find the original description.

Use of italics – Binomens (genus and specific names) are conventionally written in italics (or other contrasting typeface) to distinguish the name from surrounding text. This is advisable, although not mandatory (Appendix B.6). Subgenera and subspecies are treated similarly. Family-group names, including superfamily, family, subfamily, tribe and subtribe, are not italicised.

Alphabets and symbols that can be used – Only the 26-letters of the Latin alphabet a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z are used for scientific names of animals (Article 11.2). Usually the spelling in the original description is followed (Article 32), but accents or other marks, such as ‘é’, ‘ø’, ‘ü’, must be corrected by later users; gaps, apostrophes and hyphens are removed (except where the first element is a Latin letter used to describe a character of the taxon, e.g. *c-album*, Article 32.5.2.4.3) and numbers spelled out in letters (Article 32.5.2).

Shortening names to save space

- After its first mention in a work (excepting the title) the genus name in a binominal name can be shortened to one or more letters (Appendix B.11) for example, *Apis mellifera* can be written as *A. mellifera*. Two- (or more) letter abbreviations may be used when using two genus names with the same initial letter(s), e.g. *Ae.* for *Aedes* and *An.* for *Anopheles*, as they are often discussed in the same work.
- It is advisable to write a species name with its author(s) and date at least once in a work (Recommendation 51A; Appendix B.10), usually on first mention. The author and date can be omitted elsewhere if this will not cause confusion.
- The names of authors of scientific names are not usually abbreviated, however when a name was published by more than three authors, the name of the first author (as given in the original publication) may be cited alone in the text and followed by the term ‘et al.’ (from Latin meaning ‘and others’); the full names of all the authors should be cited in the bibliography (Appendix B.12) when practical.

Use of brackets around author name – If a species has been transferred to a genus other than the one in which it was originally described, the original author’s name and date are put in parentheses (curved brackets). The lion, for example, was originally described by Linnaeus as *Felis leo*, in full *Felis leo* Linnaeus, 1758, but as knowledge of the cat family developed the genus *Felis* was split, the lion was placed in the new genus *Panthera*, and so the name is now *Panthera leo* (Linnaeus, 1758) (Article 51.3).

Punctuation of names – Apart from a parenthesis there must be no other punctuation between the species name and the name of the original author (Article 51.2). However, punctuation can be used to indicate a citation (Article 51.2.1), for

example, *Apis mellifera* Linnaeus, 1758 was originally named by Linnaeus in a book published in the year 1758, whereas, *Apis mellifera*: Michener, 2000 or *Apis mellifera*, sensu Michener, 2000, means the bee species *Apis mellifera* as later referred to by Michener (2000), thus helping to avoid confusion over who is the original author of a name.

Basing a specific name on a personal name – A specific name based on a personal name should follow Latin grammar; it may be a noun in the genitive case, a noun in apposition (nominative case) or an adjective or participle (Article 31). A noun in the genitive case is formed by adding a standard ending to the name or to the stem of the name if the Latin equivalent of the personal name is used. The standard endings are *-ae* for a woman, *-i* for a man, *-arum* for more than one woman, *-orum* for more than one man or a mixed group. The standard endings *-ensis*, *-ense* are used for place names, and not personal names. A Latin equivalent for a personal name can be used. Names in languages using non-Latin characters must be transliterated into Latin characters. Care should be taken because incorrectly formed names usually cannot be changed afterwards (Articles 32, 34). Examples are given in Table 1 below.

Table 1. Basing a specific name on a personal name

Personal name	Latinized?	Name or stem of name	Gender ending	Specific name
Margaret	No	margaret-	-ae	<i>margaretae</i>
Margaret	Margarita or Margaretha	margarit- or margareth-	-ae	<i>margaritae</i> or <i>margarethae</i>
Karl	No	karl-	-i	<i>karli</i>
Karl	Carolus or Karlius	carol- or karli-	-i	<i>caroli</i> or <i>karlii</i>
Margaret Smith	No	smith-	-ae	<i>smithae</i>
Karl Smith	No	smith-	-i	<i>smithi</i>
Margaret and Jane Smith	No	smith-	-arum	<i>smitharum</i>
Karl and John Smith	No	smith-	-orum	<i>smithorum</i>
Margaret and Karl Smith	No	smith-	-orum	<i>smithorum</i>
Margaret Smith	Smithia	smithi-	-ae	<i>smithiae</i>
Karl Smith	Smithius	smithi-	-i	<i>smithii</i>
Margaret & Jane Smith	Smithiae	smithi-	-arum	<i>smithiarum</i>
Karl & John Smith	Smithii	smithi-	-orum	<i>smithiorum</i>
Margaret & Karl Smith	Smithii	smithi-	-orum	<i>smithiorum</i>

We do not recommend nouns in apposition because the ending of the specific name is unchanged, and could easily be confused with an author’s name (Recommendation 31A). Do not use a name which may give offence (Appendix A); authors should check that living persons agree with the way their name is to be used.

6. Publication of works on paper and other durable media

Authors, editors and publishers have a responsibility to ensure that works containing new names or nomenclatural acts are self-evidently published within the meaning of the Code. Works should contain the date of publication, and information about where copies may be obtained (Recommendation 8D).

Desirability of works on paper – We strongly urge authors and publishers to ensure new scientific names or nomenclatural acts are first published in a work printed on paper (Recommendation 8B).

Wide dissemination – Authors and editors should widely publicise new scientific names, nomenclatural acts, and information affecting nomenclature. This can be by publication in appropriate scientific journals or well-known monographic series and by ensuring new names are entered into *Zoological Record*. This is most easily done by sending a copy of the work to the *Zoological Record* (Recommendation 8A; Appendix B.9) published by Thomson Reuters.

Public accessibility of published works – Copies of published works which contain new scientific names or nomenclatural acts should be permanently conserved in public libraries (Recommendation 8C).

Inclusion of disclaimers – Works that are not issued for public and permanent scientific record (such as symposium abstracts, or notices of papers to be delivered at a meeting, minutes, etc.) are not valid publications and do not make names and taxonomic acts available. To avoid confusion, authors, editors and publishers should not include in these kinds of publications information that appears to make new names and taxonomic acts available. If names and acts must be included in these kinds of documents, editors should ensure that they contain a disclaimer (Article 8.2), for instance ‘This work is not issued for the purpose of zoological nomenclature’, so that the names and acts are clearly not available and do not enter zoological nomenclature unintentionally (Recommendations 8E). Disclaimers can also be used to avoid unintentional publication in works which are validly published but which are not intended to be used for the publication of zoological names (Recommendation 9A).

Completeness of descriptions of new taxa – Editors should ensure that the whole of the description and illustrations relating to a new nominal taxon, and particularly any nomenclatural acts or data needed to confer availability on its name, are published in the same work and on the same day (Recommendation 10A). This is particularly important in cases where supplementary information is removed from hard-copy publications and published online only, as electronic publications are not valid and the availability of a name will depend only on what is published in the hard copy. Publishing nomenclaturally critical information in a supplemental source risks making the name unavailable and can create confusion for later users of the name.

Specification of date Editors or publishers should state the day of publication of a work, and of each component part of a serial publication. In a volume made up of parts brought out separately, the day of publication of each separate part, including pages, plates, maps, etc. that constitute it, should be specified (Recommendation 21C).

Bibliographic information on separates and preprints – An author, editor or publisher should ensure that a ‘separate’ (reprint or offprint) contains a complete bibliographic citation of the original work (including its date of publication) and has the same pagination as that work. Preprints, with their own date of publication, should be identified clearly as such (Recommendation 21E).

Publication on specified date – An author, editor or publisher should not publish, permit to be published, or distribute a work, in whole or in part, for the first time other than on the specified date of publication. An author who receives separates before the specified date of publication should not distribute them until the work has been published (Recommendation 21A).

Correction of date – An author or publisher of a new scientific name or other nomenclatural act who is aware that the date specified in the work containing it is incorrect or incomplete should publish a correction (Recommendation 21F).

Recent changes to the Code affecting publication

- A work not printed on paper issued after 1999 in numerous identical, durable and unalterable copies (such as read-only laser disks) is published if the work itself contains a statement that copies (in the form in which it was published) have been deposited in at least five major publicly accessible libraries named in the work itself (Article 8.6). The deposition of paper copies is not required in this case. This article does not apply to non-durable electronic media which are not published works (Article 9.8).
- Hence the following are not validly published: (a) electronically distributed text or illustrations, such as e-mails, PDFs or web-pages; (b) downloaded copies or printouts of these; (c) abstracts of papers, posters, lectures, etc., issued at congresses, symposia and other meetings but not otherwise published; (d) offprints (separates) distributed after 1999 before the date of publication specified in the work (Article 9).
- Deposition of paper print-outs of PDFs in libraries does not make the original PDF a published work, but the paper print-out may become a published work in its own right provided it meets the criteria of publication for works printed on paper. This is not advisable as a method of publication; traditional hard-copy scientific journals are better as they usually have wider dissemination and a more durable format.

7. Publication of new species names

Authors, editors and publishers are responsible for ensuring that names are self-evidently made available within the meaning of the Code. To become available, new names must be published following the criteria in Articles 1.3 & 10–20. The criteria have become stricter over time, reflecting improved standards. Some of the main criteria currently are:

- Names must be spelled with the 26 letters of the Latin alphabet – accents and upper case letters at the beginning of specific names do not make names unavailable but must be corrected (Article 11.2).
- Binominal nomenclature must be used (Article 11.4).
- Specific names must contain two or more letters (Articles 11.8–9).
- Specific names must be published in combination with a genus name (Articles 11.9).
- There must be a description that is meant to distinguish the taxon from other taxa, or a reference to a previously published description, or the name must be expressly proposed as a new replacement name for an older available name (Article 13).
- Anonymously published names are not available (Article 14).
- Names published for varieties or forms are not available (Article 15).
- New names must be indicated as new (Article 16).
- Types must be fixed for species names (Article 16).
- Names are not available if proposed for:

- things which are not living or extinct animals (or their fossils or works);
- hypothetical concepts;
- teratological specimens as such;
- hybrid specimens;
- taxa below the rank of subspecies;
- temporary reference (not for formal taxonomic use);
- the works of extant animals, such as nests and tracks.

See Articles 1.1, 1.2, 1.3, 10.2, 13.6

- For example, the name '*Nessiteras rhombopteryx*', coined for the mythical Loch Ness Monster by Sir Peter Scott & Robert Rines (1975) *Nature* 258: 466–468, is unavailable because it does not refer to a living or extinct animal, and is a hypothetical concept. The name is an anagram of 'Monster hoax by Sir Peter S'. Journal editors beware!

Recent changes to the Code affecting the availability of new names – A new species-group name published after 1999 is not made available unless:

- it is explicitly indicated as being new (preferably by the use of a term such as 'sp. nov.' or by a directly equivalent term in the language in which the paper is written) (Article 16.1);
- its name-bearing type is fixed (a holotype or expressly indicated syntypes) (Article 16.4.1);
- if the name-bearing type of a species-group taxon proposed after 1999 is a preserved specimen or specimens, the author includes a statement with the name and location of the collection where the name-bearing type is or will be deposited (Article 16.4.2).

General advice on the establishment of new names

- An author, when drawing up the description of a new nominal taxon, should include comparisons with similar taxa to assist later identification of the taxon, and illustrate name-bearing types (Appendix B.3).
- An author establishing a new nominal taxon should state the higher (more inclusive) taxa (such as family, order and class) to which the taxon is assigned (Appendix B.4).
- An author establishing a new species-group name should state its etymology. New names should be in Latin form; they should be euphonious and easily memorable, and should not be liable to confusion with those of other taxa of any rank, or with vernacular words (Appendix B.5).
- If a new nominal taxon is established in a work written in a language which is not in wide international use for scientific purposes, the work should include an abstract which draws attention to the new name and is written in a widely used language (Appendix B.7).
- New names should be established in a work which is printed on paper, which has a wide circulation, and which zoologists would not regard as unlikely to contain new names in the taxonomic field concerned. Names should be established in the main text of the work, not in keys, tables, abstracts, footnotes or similar items (Appendix B.8).

Citation of names – A name should not be cited before its intended establishment (see also Appendix A, the 'Code of Ethics'), and should not be called 'new' except at the time of its establishment (Appendix B.10).

Further advice on nomenclatural and taxonomic aspects of describing new species can be found in the following works:

- Taylor, M. *et al.* 2011. Checklist for new zoological genus and species names: <http://svpow.wordpress.com/checklist-for-new-zoological-genus-and-species-names-draft/>
- Winston, J.E. 1999. *Describing species: Practical taxonomic procedure for biologists*. 518 pp. Columbia Univ. Press.

8. Lectotype designations

Lectotype designations must now contain an express statement of deliberate designation (Article 74.7.3, as amended by Declaration 44), such as ‘lectotype hereby designated’.

9. The future for electronic publication

Electronic publication, e.g. PDFs and web pages, is currently not valid for the purposes of nomenclature, and hard copy is still required. However, recognising the increasing importance of electronic publication, the Commission has issued a proposed amendment to the Code that outlines ways to allow publication of nomenclatural acts in electronic-only journals, but not on websites or other transient electronic media. This was published in a range of journals and available for public input for a year, then submitted to the IUBS at its meeting in Cape Town, South Africa, in November 2009, where it was ratified in principle. Further discussion is ongoing, with a decision from the Commission anticipated soon. <http://iczn.org/content/availability-electronic-publication>.

So, for journals comprising electronic and paper versions, the availability of acts, names, and dates of publication is currently defined only by the paper version. We recommend that editors of electronically published journals who wish to make the nomenclatural acts contained in them valid/available follow the joint approach for providing paper copies agreed by ICZN and the Public Library of Science: Information and guidelines for PLoS authors submitting a new taxon name (zoological nomenclature only) at: <http://www.plosone.org/static/guidelines.action>.

We also recommend that electronic preprints are not circulated as there is a danger that names and nomenclatural acts may be inadvertently or unscrupulously published by third parties who copy and publish the content in print form before the official publication of the paper copy. Hence posting electronic preprints is not good practice for nomenclatural works.

The Commission supports open access of electronic publications, e.g. following the principles of the Creative Commons license (creativecommons.org).

10. ZooBank and the registration of names

ZooBank is a Commission website for the registration of the following:

- *Nomenclatural Acts* – published usages of scientific names of animals, which affect the nomenclatural status of a scientific name or the typification of a nominal taxon;
- *Publications* – publications that contain nomenclatural acts, as defined above;
- *Authors* – names of authors of publications, as defined above;

- *Type Specimens* – type specimens for zoological names. The registration of types is provisional, with the expectation that natural-history collections holding types will implement their own registries, to which ZooBank will link.

ZooBank is currently functional, and is in a phase of rapid improvement (see <http://www.zoobank.org>). Names and acts can be registered and LSIDs are assigned for each registered component. Input is currently via a small number of editors; the interface is expected to allow greater public access in late 2011. Development is proceeding in partnership with the development of the Global Names Architecture (see <http://www.globalnames.org/>). The Commission's ZooBank Committee formulates policies for ZooBank. If you have a nomenclatural act you would like to register, or would like to become a data editor to allow you to enter multiple registrations, please contact Richard Pyle (deepreef@bishopmuseum.org).

Registration is advised for new names. It is likely to become mandatory for names in electronic-only publications if the amendment on e-only publication passes (e-only publication is not currently valid, see above). Your input on ZooBank is welcome.

11. Sources of information and advice

The full and authoritative text of the Code, FAQs and much more can be found on the Commission's website: <http://iczn.org>.

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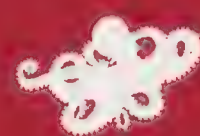
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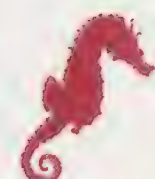
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The Bulletin of Zoological Nomenclature

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Cover image: *Paradisaea rubra* Daudin, 1800, red bird-of-paradise, an endemic, near-threatened species from the north-west Papuan Islands of Waigeo, Batanta, Gemien and Saonek. The detail is from Plate 31 of John Gould's '*Birds of New Guinea*,' vol. 1 (1875–1888). (The original image is a colour lithograph © Natural History Museum, London). The inscription on the image says '*Paradisaea sanguinea* Shaw'. The name *Paradisaea sanguinea* Shaw, 1809 is a junior synonym of *Paradisaea rubra* Daudin, 1800. Note the correct spelling of the name *Paradisaea*, ruled upon by the Commission (the Opinion is published in BZN 69(1)).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 69, part 1 (pp. 1–82)

31 March 2012

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 68, part 4, 20 December 2011) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3580: *Exechocentrus lancearius* Simon, 1889 (Arachnida, Araneae, ARANEIDAE): replacement of the holotype by designation of a neotype. N. Scharff & G. Hormiga.

CASE 3581: *Turbo bidens* Linnaeus, 1758 (Mollusca, Gastropoda, CLAUSILIIDAE): request for setting aside the neotype designated in 2009. F.W. Welter-Schultes.

CASE 3582: *Scaris* Le Peletier & Serville, 1825 (Insecta, Hemiptera, CICADELLIDAE): proposed suppression of the genus name and all family-group names based on it. M.W. Nielson, P.H. Freytag & S.H. McKamey.

CASE 3583: *Reticulitermes flavipes* Clément et al., 1985 and related subspecific names (Insecta, Isoptera, RHINOTERMITIDAE): proposed suppression. C.D.R. Stephen & X.P. Hu.

The International Trust for Zoological Nomenclature

The International Trust for Zoological Nomenclature (the Trust) was founded in 1947 to manage the Commission's financial matters. It is a registered charity, based in the U.K. (No. 211944). At present, the Trust consists of 25 members from 13 countries. Discussion of the Trust's activities can be found in BZN 60: supplement, pp. 1–12 (March 2003).

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Candidate Part of List of Available Names (LAN) for species in the phylum Rotifera – period of public commentary begins

Following Article 79 of the Code (Chapter 17 <http://www.nhm.ac.uk/hosted-sites/iczn/code/>), a committee of experts developed a *Candidate Part of the List of Available Names* for species of Rotifera from the start of zoological nomenclature to the year 2000. Details of how the *Candidate Part* was assembled are described in *Zootaxa* 3179: 61–68 (2012) by the expert rotifer taxonomy committee of H. Segers, W.H. De Smet, C. Fischer, C. Fontaneto, E. Michaloudi, R.L. Wallace & C.D. Jersabek (<http://www.mapress.com/zootaxa/2012/f/zt03179p068.pdf>). Following Article 79, the *Candidate Part* is available for a year to receive public comment. Comments on the list may be made on a dedicated set of webpages at <http://iczn.org/lan/rotifer>, or by direct correspondence with the ICZN Secretariat (iczn@nhm.ac.uk). The year of comment begins on 31 March 2012.

The *Candidate Part* is divided into two sections. Section A includes names that are proposed to be included in the *List of Available Names*; Section B includes names of rotifers that are proposed not to be included in the LAN for reasons described in *Zootaxa* 3179: 61–68 (2012). Comments are invited on both sections.

Case 3548

A proposal for the treatment of *Mémoires pour servir à l'histoire des insectes* by De Geer (1752–1778) and the additional volume by Retzius (1783)

Francisco Welter-Schultes

Zoologisches Institut, Universität Göttingen, Berliner Straße 28, 37073
Göttingen, Germany (e-mail: fwelter@gwdg.de)

Frank Wieland

Biozentrum Grindel & Zoologisches Museum, Universität Hamburg,
Martin-Luther-King-Platz 3, 20146 Hamburg, Germany
(e-mail: fwielan@gmail.com)

Abstract. We analysed the eight volumes of *Mémoires pour servir à l'histoire des insectes*, published between 1752 and 1778 by De Geer, and an additional volume published by Retzius in 1783. We found that none of these works was consistently binominal. A great number of names of taxa of many insect and other arthropod groups that were established in those works are currently widely accepted and used, and regarding them as unavailable would cause an unnecessary amount of confusion and taxonomical instability. De Geer (1752) is a pre-Linnaean publication and the two parts of volume 2 (1771a, b) did not contain any Latin names. We propose that the works published by De Geer (1773, 1774, 1775, 1776, 1778) and Retzius (1783) be ruled to be available as binominal works and 140 polynominal names mentioned therein be suppressed, mostly for being identified as polynominal. Among the polynominal names included in these volumes were the very commonly used names for human lice (*Pediculus humanus capitis* and *P. humanus corporis*) which De Geer regarded as different species, not as subspecies of *P. humanus*. We suggest that *P. h. capitis* be considered available and that *P. h. corporis* be suppressed (the latter being commonly regarded as a synonym of *P. h. humanus* Linnæus, 1758 in modern biology and medicine). Generic names established as compound words connected with a hyphen should generally be regarded as binominal and available, but we propose to suppress De Geer's spider names *Aranealupus*, *Araneaphalangium* and *Araneacancroides* for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy.

Keywords. Nomenclature; taxonomy; early zoological literature; Arthropoda; Insecta; Chelicerata; De Geer; Retzius.

1. *Mémoires pour servir à l'histoire des insectes* was a multivolume work published in eight volumes between 1752 and 1783 by the Swedish naturalist Carl De Geer (*1720, †1778) (volumes 1–7) and the Swedish naturalist Anders Jahan Retzius (*1742, †1821) (volume 8). De Geer published the first volume of the *Mémoires* in 1752, it therefore was a pre-Linnean work (Article 3.2). All names of taxa in this and

volumes 2 and 3 (De Geer, 1771a, b) were in French and therefore not available. Latin names for taxa were proposed by De Geer in the five remaining volumes between 1773 and 1778 and in the subsequent work by Retzius (1783). Besides the large number of binominal names (more than 850) described by De Geer and Retzius we identified many polynominal names of taxa, which render each of the six publications not consistently binominal under Article 11.4 of the Code, as we interpret the latter in paras. 5 and 6 below. In none of these works was binominal nomenclature consistently applied.

We herein give a brief introduction to the style of the works followed by a list of polynominal names that should not be regarded as available for nomenclature.

2. To take a decision on binominality it is necessary to understand the style of the author. De Geer's style was largely consistent throughout his last five volumes of the *Mémoires* (De Geer, 1773, 1774, 1775, 1776, 1778). The description of each species started with a French generic name (in capitals and italics), followed by a diagnosis (in French, italicised), e.g. De Geer, 1774, p. 22: '*STAPHYLIN lisse d'un noir luisant, à antennes brunes obscures & à ventre allongé*'. French diagnoses are followed by a line, in which the species are referred to by a Latin name, which is italicised and written in a smaller font.

The Latin generic names are followed either (a) by a Latin diagnosis alone (e.g. De Geer, 1774, p. 22): '*Staphylinus niger nitidus, antennis obscure fuscis, abdomine elongato*' or (b) by a specific name (in parentheses and non-italicised) followed by a Latin diagnosis (e.g. De Geer, 1774, p. 20): '*Staphylinus (bombilius) hirsutus niger, capite thorace abdominisque apique viridi-flavis nitidis*'. The binominal name *Staphylinus bombilius* in the above example is a newly proposed scientific name, which is indicated by the absence of a literature citation after the Latin diagnosis; assuming that the work is classified as binominal, *Staphylinus bombilius* De Geer, 1774 should be considered as an available name.

The diagnoses are often followed by citations of previous descriptions or/and illustrations (e.g. De Geer, 1774, p. 22): '*Staphylinus (politus) niger, thorace elytrisque nigricantibus nitidis. Linn. Faun. Ed. 2. no. 843. Syst. Ed. 12. p. 683. no. 5*'.

This name (*Staphylinus politus* Linnæus, 1758) was only cited (as from Linnæus, 1761, p. 231 and Linné 1767, p. 683), but not used as a valid name in De Geer's own classification. These scientific names could also differ from those used as valid by De Geer himself (e.g. De Geer, 1774, p. 20): '*Staphylinus (hirtus) hirsutus niger, thorace abdomineque postice flavis. Linn. Faun. Ed. 2. no. 839. Syst. Ed. 12. p. 683. no. 1*'.

This passage, following his own description of *Staphylinus bombilius* De Geer, 1774, indicated that he regarded *Staphylinus hirtus* Linnæus, 1758 as a synonym of his own name *Staphylinus bombilius*. From a nomenclatural point of view, De Geer established a subjective junior synonym of the Linnean name. However, the validity of this and other instances of synonymy should be judged based on an analysis of the type specimens, which has not been done for the 850 species-group names involved here.

In some cases De Geer listed references to previously published information and figures without Latin diagnoses and names (e.g. De Geer, 1774, p. 20): '*Schæff. Abhandl. von Ins. Tom. 1. p. 81. Tab. 2. Fig. 12. Icon. Ins. Tab. 36. Fig. 6*' (references to Schäffer (1764) and Schaeffer [1766]).

For some species no previous references were given. These blocks of names, diagnoses and references were followed by an often elaborate French discussion on the species and its biology, non-italicised.

From the author's style it is easy to recognize specific names that were established and used by De Geer. Such names were consistently enclosed in parentheses, were not italicised and followed the generic name at the beginning of the first line of the relevant Latin description. The names used in the literature references were printed in the same font and style, but were only cited and not used by De Geer in his own classification.

The main text body of each volume was followed by several pages of explanations of the many plates at the end of the volumes. De Geer used only French names in the explanations of the plates. No names were mentioned on the plates. De Geer's volumes did not contain an index.

3. Following De Geer's death in 1778, Retzius (1783) published a work based on the *Mémoires*, in which he gave a summary of De Geer's names, supplemented De Geer's data and introduced several new names. In the first chapter Retzius (1783, pp. III-VI) explained the taxonomic system used. This part was followed by a numerical list of the genera which he treated in the work (Retzius, 1783, pp. 7–29). Thereafter followed a numerical list of the species (Retzius, 1783, pp. 30–220). Retzius's (1783) volume did not contain any plates or figures. In the species list the name of each species was consistently given in the first line of the description block, set in italics. It was followed by a descriptive text in Latin (non-italicised), De Geer's volume and page, and the corresponding Linnean name and bibliographical reference (e.g. Retzius, 1783, pp. 102, species 552): '552. *St. bombilius*, hirsutus niger, capite thorace abdominisque apique viridi-flavis nitidis. T. 4. p. 20'. *St. hirtus*. L. S. N. p. 683.

The expression 'T. 4.' referred to volume 4 of the *Mémoires*. This reference was absent only in the species described by Retzius (1783) himself. In many cases Retzius (1783) referred in the last line to the name that Linnaeus had chosen for the species in his *Systema Naturae* (L. S. N.), and to the page in Linnaeus's (1767) work where the name was originally mentioned. In cases where no reference to Linnaeus was given (e.g. Retzius, 1783, p. 113, species 645), the name had been proposed by De Geer (1773, 1774, 1775, 1776, 1778) or by Retzius (1783) himself (e.g. Retzius, 1783, p. 102, species 556): '556. *St. aeneus*, glaber aeneo-viridis nitidus, abdomine pedibusque nigris. T. 4. p. 23'.

Specific names used as valid by Retzius (1783) were always mentioned at the beginning of the first line of the description blocks and (together with the abbreviated generic name) set in italics. This allows for an unambiguous identification of a specific name in this work. In some cases Retzius mentioned two names in italics in the same paragraph (e.g. Retzius, 1783, p. 156, species 999): '999. *C. carinato-punctatus*, brevirostris, antennis fractis, femoribus muticis, corpore subgloboso rufo-fusco punctis flavo-griseis, elytris carinatis. *C. griseo-punctatus*. T. 5. p. 244'.

Here only the first name *C.* [= *Curculio*] *carinato-punctatus* at the beginning was used for the taxon, whereas the other name *C.* [= *Curculio*] *griseo-punctatus* was merely cited from De Geer's work. This happened in the few cases where De Geer had used the same name for two different species and Retzius replaced one of them

with a new name, in this particular case one of the two *C. griseo-punctatus* De Geer, 1775 (p. 217 and p. 244).

4. Each volume of the *Mémoires* (De Geer, 1773, 1774, 1775, 1776, 1778) and Retzius (1783) contained names that were unambiguously polynominal (totalling 140 names under the interpretation specified in the two following paragraphs), which under any current interpretation of Article 11.4 would certainly render the entire work unavailable for nomenclature. Many of the more than 800 species-group names established by De Geer and Retzius are, however, currently used for various arthropod taxa. Besides insects, De Geer (1778) and Retzius (1783) also studied Araneae, Acari, Pseudoscorpiones, Opiliones, Diplopoda, Crustacea and others. Suppressing these works or regarding them as non-binominal will threaten nomenclatural and taxonomic stability. We therefore propose to set aside the provisions of Article 11.4 and to regard the works of De Geer (1773, 1774, 1775, 1776, 1778) and Retzius (1783) as available for nomenclatural purposes. All new binominal names described therein are proposed to be treated as available.

5. De Geer used many new specific names composed of more than one word. Some of these were binominal, others were not. We did not find a precise definition for the term ‘consistent application of binominal nomenclature’ in the Code. In the following we intend to propose a guide for exploring the boundaries of binominal nomenclature that can be applied to this multivolume work.

The Principle of Binominal Nomenclature is generally defined in the Glossary as ‘*the principle that the scientific name of a species, and not of a taxon at any other rank, is a combination of two names (a binomen, q.v.); the use of a trinomen (q.v.) for the name of a subspecies and of uninominal names for taxa above the species group is in accord with the Principle. See Articles 5, 11.4*’. A binomen is defined in the same Glossary as ‘*the combination of two names, the first being a generic name and the second a specific name, that together constitute the scientific name of a species [Article 5.1]. Any interpolated names [Article 6] are not counted as components of a binomen*’. Accordingly, anything that deviates would not be considered binominal. However, there is little further guidance in the Code as to how the boundaries of this definition can or must be identified in practice.

In Article 11.4 (*‘the author must have consistently applied the Principle of Binominal Nomenclature [Article 5.1]’*) the explanation of consistent application of binominal nomenclature is reduced to the analysis of specific names, by reference to Article 5.1: ‘*Names of species. The scientific name of a species, and not of a taxon of any other rank, is a combination of two names (a binomen), the first being the generic name and the second being the specific name.*’ The Glossary’s general definition for ‘name’ is ‘*a word, or ordered sequence of words, conventionally used to denote and identify a particular entity (e.g. a person, place, object, concept)*’.

Nowhere in these definitions is it precisely stated that a specific name must not consist of, for instance, ten words, and how their sequence should or should not be ordered. This is surprising since for a long time there has been a relatively clear and commonly accepted convention among zoologists using binominal nomenclature that beyond a relatively narrowly defined limit or tolerance the use of specific names composed of several words will render a work unavailable for the purposes of zoological nomenclature. Such names, which had been widely used in the pre-Linnean literature, are commonly known as polynominal names. In the absence

of a precise definition in the Code, modern taxonomists who are confronted with early zoological works seem to have problems in differentiating binominal and polynominal names (Fricke, 2008; Dubois & Bour, 2010).

The term ‘polynominal’ is not mentioned in the Code. We use it here in the sense of ‘a specific name that consists of two or more words, and that is beyond the limits provided for a binominal name under Article 11.9.5, wherever this limit may be set by anyone who intends to apply binominal nomenclature’. This definition means that the term ‘polynominal name’ shall always refer to a name that is not accepted as a binominal name, regardless of a person’s detailed interpretation of the Code. It is necessary to give this definition in order to disconnect the term from being defined by the number of words contained in a compound name, and to indicate at the same time that the name is rejected as a scientific name because it contains too many words. We are here referring to Article 11.9.5, which is not part of the definition of binominal nomenclature, but is more useful because it intends to outline the limits beyond which a specific name composed of separate words is not regarded as available. This Article is supplemented by an example saying: ‘the words ‘*aquilegiae flava*’ in *Aphis aquilegiae flava* (i.e. the yellow aphid of *Aquilegia*) do not form an admissible species-group name’ (in the French Code the term ‘*acceptable*’ is used), the only occasion where a polynominal name is mentioned in the Code, but which gives no statement on the consequences of being ‘*not admissible*’/‘*pas acceptable*’. However examples do not form part of the legal text of the Code (Article 89.2). In accordance with Article 11.9.5. we interpret this name ‘*Aphis aquilegiae flava*’ as an example of what is beyond the limits of tolerance, a polynominal name, which, if used as a scientific name for species and regardless of being a *nomen nudum* or not, will render a work as not consistently binominal. We interpret the term ‘consistent’ so that not a single exception is accepted.

6. When we decided which names from De Geer’s work should be admissible as binominal and which names not, we had to look closely at the grammatical background of binominality. ‘To be available, species group names composed of more than one word must refer to a ‘single entity (e.g. host species, geographical area)’ (Article 11.9.5). Available names in this sense are *novae hispaniae*, *terrae novae*, *bonae spei*, *sancti johannis*, *quercus phellos*, *striato-radiatus* and *10-lineata* (examples given in Articles 11.9 and 32.5) (Welter-Schultes & Klug, 2011). Apart from host species and geographical areas we also find adjectives combined by a connecting vowel, and cases where one word refers to another word of the specific name (*decem lineata* = with ten lines). In all cases, one of the two words in the specific name refers to the other word in the specific name, not independently to the generic name (Welter-Schultes & Klug, 2011). The term ‘single entity’ implies that the fact that two words are used to express the idea is only an artifact produced by the selected language, Latin. Welter-Schultes & Klug (2011) noted that there are languages in which a ‘single entity’ always aligns with a single word, making the grammatical relationship immediately obvious. German, Dutch, Swedish and related languages can be used to facilitate this interpretation, all ‘single entity’ names in these languages consisting of only one word. In German the compound specific names mentioned above would be literally translated to the single words Neuspanien-, Neuland-, Guthoffnung-, Heiligjohann-, Felloseichen-, Streifenstrahlen-, Zehnlinien-.

Two examples were provided for the other side of the limit (Article 11.9). In *Aphis aquilegiae flava* we see two words in the specific name that both refer to the generic name (the yellow *Aphis*, and the *Aphis* of the host plant *Aquilegia*). In *rudis planusque* two independent words were united by a conjunction ('rough and flat'), both words would refer to the generic name. So the difference between binominal and polynominal is hidden in the grammatical structure of the words.

We believe that our interpretation is in accordance with common usage in zoology, and also with Buchanan et al. (1948, p. 291), who applied the same criteria for bacteriological nomenclature and explained that in the hypothetical name *Bacillus aureus lactis* both terms refer to the generic name, the species has two specific epithets ('two specific names' in zoological terminology), a sequence of two unrelated words. Buchanan et al. (1948) explained that hyphenating the two words (*B. aureus-lactis*) would not improve the situation, both words would still remain unrelated. Only by combining the two words grammatically (*B. aurei-lactis*) would the meaning be changed and the form would be correctly binominal. We found that the bacteriological guide was the only written official document in the biological sciences that could be used for this problem.

Dubois & Bour (2010, p. 8) commented on several species-group names composed of two words found in Laurenti (1768). The authors neglected the grammatical relationships of the words and argued that presence or absence of a hyphen should be regarded as decisive for a consistent application of binominal nomenclature. This was rejected by Welter-Schultes & Klug (2011) for various reasons. Classical Latin did not know the hyphen, early zoological authors did not follow fixed conventions. Some (e.g. Leske, 1778, p. 234) wrote *striato radiatus*, others (e.g. Parkinson, 1830, p. 148) wrote *striato-radiatus*, some (e.g. Linnæus, 1758, p. 365) wrote *10-punctata*, others (e.g. Fabricius, 1775, p. 82) wrote *10 punctata*. Many of the important early works would have to be regarded as not consistently binominal, including most works by Fabricius, Thunberg, Schrank, Leske and others, if such a hyphen rule would be applied. Also Linnæus (1758) established some specific names as separate words without hyphen (for example *Conus Stercus muscarum*). So this proposal is not an option.

In the *Mémoires*, where we had to analyse many names that very closely approached either side of the limit, we only found few cases where it was difficult to identify the border line between binominal and polynominal. We found many specific names composed of two words within the frame outlined here which we consequently regarded as binominal. In all cases where each of the components of the species-group name individually referred to the generic name, we considered the specific name as polynominal. For instance, we did not regard *Elater fuscus flavipes* (as published by De Geer, 1774, p. 151) as binominal because both *fuscus* and *flavipes* grammatically did not refer to each other but were individual adjectives, each one referring to *Elater* (meaning the beetle is brownish *and* has yellow feet, in German Brauner Gelbfuß-[Käfer], such a name can be separated to form two independent terms, Brauner [Käfer] and Gelbfuß-[Käfer]). By using the correct connection vowel the name would become *E. fusco-flavipes*, with a change in the meaning ('brown-yellow-footed', in German Gelbbraunfuß-[Käfer]). The connecting vowel rule was applicable in many cases where the compound specific names consisted of adjectives.

Using the definition given by Buchanan et al. (1948), inserting a hyphen (*E. fuscus-flavipes*) would not modify the situation. Our list of non-binominal names comprises six trinominal names which referred to species and were hyphenated, but grammatically they did not represent a single Latin word (*Cicada foliata-fasciata*, *C. foliata-arcuata*, *C. foliata-fusca*, *C. foliata-sinuosa*, *Bombylius tabaniformis-griseus*, *B. tabaniformis-rufus*). Following the bacteriological guide they are not to be classified as binominal (two unrelated words), but we admit that the zoological Code allows an interpretation by which any sequence of hyphenated words can be regarded as binominal if they are considered to represent one single word (Art. 11.2 and 11.9.1.1 in combination with Art. 32.5.2.3, if *foliata-fasciata* is defined as one single word under Art. 11.3, as one single Latin word or an arbitrary combination of letters formed to be used as a word). So we had two options. We preferred not following the latter interpretation because for a deviation among different biological sciences in this important nomenclatural point, the precise definition of binominality, an official zoological document would be desirable (Art. 89.1.1). We are not aware that the six questionable names have ever been used in the past 200 years. This facilitated our decision to include them in the Index, which we would not like to be interpreted as a case of precedent or preliminary decision in the zoological definition of binominality.

We agree with Dubois & Bour (2010) that it would be very useful if the Code would outline the limits of binominal nomenclature much more precisely than in the 4th edition. An example as given in the Bacteriological Code (Buchanan et al. 1948, p. 291) would be useful; *Elater fuscus flavipes* could serve for this purpose.

7. Names for subspecies or variants were not intended by De Geer. De Geer listed many non-binominal names that differed in the third name only, e.g. *Musca vivipara major* (see De Geer, 1776, p. 63) and *M. vivipara minor* (see De Geer, 1776, p. 70), or *Acarus aquaticus ruber*, *A. aquaticus globosus*, *A. aquaticus maculatus*, *A. aquaticus holosericeus*, and *A. aquaticus marginatus* (see De Geer, 1778, pp. 141, 146, 147, 149, and 152, respectively). These could be interpreted as subspecific names (of the species *Musca vivipara* and *Acarus aquaticus*, respectively). However, there are several examples suggesting that De Geer did not regard such taxa as subspecific. This becomes obvious, for instance, in *Musca major larvarum* (see De Geer, 1776, p. 24) and *Musca minor larvarum* (see De Geer, 1776, p. 25), in which the middle name varied.

Retzius (1783) on the other hand apparently applied a subspecies concept at least in two cases. *Cimex najas* was mentioned with three distinct variants (Retzius, 1783, p. 89), referred to by letter and name, thus covered by Article 72.4.1 of the Code. These were *Cimex najas* [α] *apterus*, [β] *alatus* and [γ] *inermis*. Each of them included an individual description. The second case was *Pediculus humanus* [α] *capitis* and [β] *corporis* (see Retzius, 1783, p. 210; see below for a discussion of this case).

With the exception of these two special cases we propose to regard all trinominal names mentioned by Retzius (1783) and De Geer (1773, 1774, 1775, 1776, 1778) not as names of subspecies but as polynominal names intended to denote species.

8. A special case was created by Retzius (1783, p. 47) who proposed *Phalaena γ-graecum*, using the original Greek (lower case) letter Gamma in the species-group name for a name constructed analogously to *Papilio c-album* (i.e. simply meaning

‘the Greek Gamma’). Article 11.2 does not allow non-Latin script in a scientific name. Therefore the use of the Greek letter γ renders the name γ -*graecum* unavailable.

9. Three names referred to the two species of human lice, currently in most taxonomic sources known as *Pediculus humanus* and *Pediculus capitis*. Linnaeus (1758, p. 610) established *Pediculus humanus* for the human louse, mentioning ‘*Habitat in capite & vestimentis humanis*’ (lives on the human head and clothing).

De Geer (1778, p. 67) mentioned two names *Pediculus humanus capitis* and *Pediculus humanus corporis*. His style (see chapter 2) and the fact that he did not apply a proper subspecies concept (see chapter 7) suggests that De Geer did not regard *capitis* and *corporis* as subspecies of *P. humanus*. This is strongly supported by De Geer’s own statement with regard to these two names: ‘*Il y a donc une différence palpable entre ces deux sortes de Poux, & qui semble indiquer qu’ils sont d’espèce différente, à moins qu’on ne veuille plutôt, comme a fait M. de Linnaeus, les regarder comme de deux variétés.*’ (Therefore, there is a palpable difference between these two sorts of lice, and it seems to indicate that they are of different species, unless one would rather, as was done by Mr de Linnaeus, regard them as two varieties). De Geer therefore indicated that he considered the two forms as distinct species, which means that he used *humanus capitis* and *humanus corporis* as species-group names. Both parts of the composite specific name referred to the generic name, not to each other, so they were polynominal under Article 11.9.5 (see chapter 6).

Retzius (1783, p. 210) applied a subspecies concept to these names, addressing them as *Pediculus humanus* [α] *capitis* and [β] *corporis* (see also chapter 7), a classification that was not intended by De Geer (1778).

The name *capitis* is widely used today, predominantly in medical and taxonomic publications, for the human head louse. The name *corporis*, for the human body louse, is today regarded as a synonym of the name *humanus*, so this name is not used in the consistently binominal literature (Durden & Musser 1994, p. 5). In Internet queries we observed that the name *corporis* is still widely used and that many scientists are uncertain about which one should be the correct name for the human body louse. This problem is well illustrated by the example of three publications from 2010 and 2011: Abdel-Ghaffar et al. (2010) used *Pediculus humanus corporis* and *Pediculus humanus capitis*, Cueto & Picollo (2010) used *Pediculus humanus humanus* and *Pediculus humanus capitis*, and Beytur et al. (2011) used *Pediculus corporis* and *Pediculus capitis*. Furthermore, a query for *Pediculus corporis* in May 2011 yielded more than 5,000 hits in Google Scholar. Successful queries in various Wikipedia language sections for *corporis* reflect that moderately skilled authors in a community-controlled web service are also uncertain about the taxonomic and nomenclatural status of that name. Our observations suggest that the Commission’s previous statements (ICZN, 1928, p. 28, ICZN; 1957, p. 24) on the identity of *corporis* were either not understood or not known, and that officially suppressing the name in a clear decision could contribute to improve the situation. We propose that the Commission rule under the plenary power that *Pediculus humanus capitis* was made available as a subspecies by De Geer (1778) and suppress the subspecific name *Pediculus humanus corporis* De Geer, 1778 and all subsequent uses of *corporis*.

10. De Geer (1778, p. X) established the genus *Ricinus* for a group of Phthiraptera (Insecta), with a description and without nominal species included, if we interpret De Geer's style as outlined above (para. 2). In the descriptions of the species (pp. 71–81) he indicated their host animals (in italics and not in parentheses). Later these terms were interpreted as specific names (despite their not meeting the conditions of Article 11.5): *R. fringillae* (p. 71), *R. emberizae* (p. 74), *R. cornicis* (p. 76), *R. lari* (p. 77), *R. mergiserrati* (p. 78), *R. gallinae* (p. 79), and *R. canis* (p. 81). Hopkins & Clay (1960, p. 326) suggested regarding this as an accidental style error and the names *R. fringillae*, *R. cornicis*, *R. mergiserrati*, *R. gallinae* and *R. canis* as having been made available on this occasion by De Geer, 1778 (*R. emberizae* and *R. lari* were neglected). The Commission approved this view in Opinion 627 (BZN 19: 91–96). Otherwise the names would have been made available by Retzius, 1783. The Commission noted that Opinion 627 was not meant to prejudge the general question on the availability of De Geer's work. We proposed this to be done here.

11. The *Aranea-lupus* problem. In his chapter '*Recapitulation de l'arrangement des insectes*' De Geer (1778, pp. 667–862) summarised the taxonomic classification he had applied throughout the *Mémoires*. Therein, De Geer (1778, pp. 849–850) mentioned seven spider 'families' which he had established in the 1778 volume and for which he chose the names *Aranea retiaria* ('netfighter-spiders', referring to the retiarius, a Roman gladiator who specialized in using weighted fishing nets as weapons), *Aranea textoria* ('spiders with spider-nets'), *Aranea vestiaria* ('wardrobe-spiders'), *Aranea lupus* ('wolf spiders'), *Aranea phalangium*, *Aranea cancroides* ('crab spiders'), and *Aranea aquatica* ('water spiders').

For his group of *Aranea aquatica* De Geer mentioned *Aranea aquatica* Linnæus, 1758 as the only included species. The specific names of the species belonging to his 'families' *Aranea retiaria*, *textoria*, and *vestiaria* were mentioned without exception in combination with *Aranea* as the generic name, so these three names were not used as genus-group names. The terms *retiaria*, *textoria* and *vestiaria* were only mentioned in the descriptive text of the species (following the specific name in parentheses; see para. 2). In contrast to this style, although having introduced them in a higher hierarchy, De Geer used *Aranea-lupus*, *Aranea-phalangium*, and *Aranea-cancroides* as genus-group names in his classification (De Geer, 1778, pp. 269, 285 and 297, respectively).

As suggested by the descriptions of the 'families', De Geer derived their names from the French vernacular names *Araignées-loups* ('wolf spiders'), *Araignées-phalanges* ('phalanges' in the French word for phalanx bones, commonly known as finger bones, but this was not consistent with the Latin word, as *phalangium* refers to a kind of venomous spider), and *Araignées-cancroides* ('crab spiders') and did not intend to use 'lupus', 'phalangium' and 'cancroides' in a subgeneric sense. After mentioning the vernacular 'family' names De Geer provided their Latin names in parentheses. While *Aranea-phalangium* was hyphenated in the 'family' description, *Aranea lupus* and *Aranea cancroides* were not. However, in the species descriptions assigned to the respective 'families' the three names were unambiguously used as generic names and hyphenated with very few exceptions. All specific names mentioned for these genera were binominal.

Genus-group names composed of more than one word are rare. Screening of *Nomenclator Zoologicus* (www.ubio.org/NZ, November 2010) for genus-group

names written with hyphen revealed little more than 100 names, of which about 50 were actually used. Examples of original spellings of currently used names are *A-Thienemannia* Viets, 1920 (Arachnida), *Amplexi-Zaphrentis* Vaughan, 1906 (Anthozoa), *Arco-Scalpellum* Hoek, 1907 (Crustacea), *Armato-Balanus* Hoek 1913 (Crustacea), *Austro-Peripatus* Sedgwick, 1908 (Onychophora), *Channo-Muraena* Richardson, 1848 (Actinopterygii), and *Hemi-Ramphus* Cuvier, 1816 (Actinopterygii). Other names like *Xero-Campylaea* Kobelt, 1871 (Gastropoda) were spelled as one word in *Nomenclator Zoologicus*, with correct reference to the original source, but had originally been spelled with a hyphen. In contrast to specific names (Articles 11.9, 11.9.5), the Code does not provide a regulation for how to treat compound genus-group names that were published as separate words connected by a hyphen. A genus-group name must be ‘a word’ (Article 11.8), while species-group names (Article 11.9) can either be ‘a word’ or a ‘compound word’ formed from separate words (under the provisions of Articles 11.9.5 and 32.5.2.2). This means that the generic names mentioned above are not available. We propose to solve the problem by adding a new Article (11.8.2, equivalent to Article 11.9.5) in the Code’s next edition to allow the consolidation of compound words in genus-group names originally established with hyphen. These are more than a negligible number of such names, but still so few among the 400,000 genus-group names of animals (0.01–0.02 %) that previous editors of the Code have not been aware of the problem. We assume that this is an unintended gap in the Code.

Anticipating a possible future ruling in this sense we suggest removing the hyphen and declare *Aranealupus* De Geer, 1778, *Araneaphalangium* De Geer, 1778, and *Araneacancroides* De Geer, 1778 as not available. These three names are currently not used for taxa.

12. We did not verify the current allocations of the more than 850 new names established in this multivolume and multidisciplinary work, with all their potential synonyms and homonyms. It seems that De Geer’s work has been widely regarded as not consistently binominal, in accordance with the Code (Article 1.4). But it also seems that many other authors have started accepting De Geer’s binominal names as available, and have merely ‘skipped’ the polynominal names. We elaborated the present proposal in order to reflect this situation, to legalize current usage and to provide nomenclatural stability for the currently used names. However, the Commission’s ruling will apply only to the works and names concerned in this application (Article 80.5 of the Code).

13. We identified six names which were most probably not polynominal in the above outlined sense, but ambiguous in their interpretation: *Monoculus Pulex ramosus*, *Monoculus Pediculus ramosus* (both from De Geer, 1778), *Phalaena Noctua major*, *Phalaena Tinea Pini*, *Vespa crabro medius*, *Vespa crabro major* (the latter four from Retzius, 1783). In these names it was unclear if the ‘middle name’ was meant as a subgeneric name or as part of a specific name. In the case of *Vespa crabro medius* the last name (*medius*) referred to *crabro* and not to *Vespa* (suggesting the same interpretation for *Vespa crabro major*). These six names have never been used. We suggest that they be placed on the Official List to avoid confusion in the future.

14. Previous Opinions on names from the works treated herein:

De Geer, 1773***Cimex rostratus***

OPINION 719 (1965, BZN **22**: 24–25): Suppressed under the plenary power for the purposes of the Principles of Priority and Homonymy.

Cimex najas

OPINION 247 (1954, Op. & Dec. **5**: 91–102): Available, type species of *Aquarius* Schellenberg, 1800.

Perla

OPINION 645 (1963, BZN **20**: 29–30): Available, junior homonym of *Perla* Geoffroy, 1762.

De Geer, 1774***Hydrophilus aeneus***

OPINION 538 (1959, BZN **20**: 57–64): Suppressed under the plenary power for the purposes of the Principles of Priority and Homonymy.

De Geer, 1778***Ricinus*, *Ricinus fringillae*, *Ricinus cornicis*, *Ricinus mergiserrati*, *Ricinus gallinae* and *Ricinus canis***

OPINION 627 (1962, BZN **19**: 91–96): Available from De Geer, 1778.

Retzius, 1783***Cimex najas alatus***

OPINION 1741 (1993, BZN **50**: 245): Subspecific name, suppressed under the plenary power for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy.

Perla

OPINION 645 (1963, BZN **20**: 29–30): Available, junior homonym of *Perla* Geoffroy, 1762. Incorrectly cited as from p. 50. Name was mentioned on p. 60. Ruling provoked the misunderstanding that Retzius (1783) used *Perla* in a different sense than De Geer (1773), which is not true. This should be corrected, Retzius did not establish a new name *Perla*.

15. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to set aside the provisions of Article 11.4 and declare the volumes of the work *Mémoires pour servir à l'histoire des insectes* published by De Geer (1773), De Geer (1774), De Geer (1775), De Geer (1776), De Geer (1778) and Retzius (1783) to be binominal and available for nomenclatural purposes;

(b) to suppress the 140 names listed below for nomenclatural purposes;

- (c) to rule that *Pediculus humanus capitis* was made available by De Geer (1778, p. 67);
- (d) to suppress the available name *Pediculus humanus corporis* De Geer, 1778 (p. 67) for the purposes of the Principles of Priority, but not for those of the Principle of Homonymy;
- (e) to suppress the available names *Aranealupus* De Geer, 1778, *Araneaphalangium* De Geer, 1778 and *Araneacancroides* De Geer, 1778 for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *capitis* De Geer, 1778, as published in the binomen *Pediculus humanus capitis*;
- (3) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Aranealupus* De Geer, 1778 as suppressed in (1)(e) above;
 - (b) *Araneaphalangium* De Geer, 1778 as suppressed in (1)(e) above;
 - (c) *Araneacancroides* De Geer, 1778 as suppressed in (1)(e) above;
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name: *corporis* De Geer, 1778, as published in the binomen *Pediculus humanus corporis* as suppressed in (1)(d) above;
- (5) to issue an Official Correction amending the entry for *Perla* Retzius, 1783 on the Official Index to record that it is not an available name but a subsequent use of *Perla* De Geer, 1773 (a junior homonym of *Perla* Geoffroy, 1762).

List of 140 polynominal names from De Geer's and Retzius's works proposed for suppression:

We have tried to check whether some of these names are in current usage, but did not find any name in this list that is currently used for a taxon. However, several insect groups were poorly represented on the internet, and it is theoretically possible that we have missed usage of rarely mentioned names. If some were in usage, we would anticipate that some authors would use them, and others in the same field would reject them for not being binominal.

De Geer, 1773

- Aphis nuda Pini* De Geer, 1773 (p. 27)
- Aphis tomentosa Pini* De Geer, 1773 (p. 39)
- Aphis betulæ nigro punctata* De Geer, 1773 (p. 45)
- Aphis Salicis farinosa* De Geer, 1773 (p. 76)
- Aphis Tiliæ nigro-punctata* De Geer, 1773 (p. 77)
- Cicada spumaria graminis* De Geer, 1773 (p. 163)
- Cicada spumaria Salicis* De Geer, 1773 (p. 180)
- Cicada musciformis Ulmi* De Geer, 1773 (p. 189)
- Cicada musciformis Rosæ* De Geer, 1773 (p. 193)
- Cicada Laternaria Chinensis* De Geer, 1773 (p. 197)
- Cicada Laternaria fusca* De Geer, 1773 (p. 200)

- Cicada foliata-fasciata* De Geer, 1773 (p. 205)
Cicada foliata-arcuata De Geer, 1773 (p. 206)
Cicada foliata-fusca De Geer, 1773 (p. 208)
Cicada foliata-sinuosa De Geer, 1773 (p. 208)
Cimex viridis totus De Geer, 1773 (p. 266)
Cimex niger spinipes De Geer, 1773 (p. 269)
Cimex griseus nigro-punctatus De Geer, 1773 (p. 270)
Cimex niger rufipes De Geer, 1773 (p. 286)
Cimex depressus Betulæ De Geer, 1773 (p. 305)
Cimex viridis pensylvanicus De Geer, 1773 (p. 330)
Cimex nanus fasciatus De Geer, 1773 (p. 343)
Locusta viridis cantatrix De Geer, 1773 (p. 428)
Sphex Americana aptera De Geer, 1773 (p. 591)

De Geer, 1774

- Lampyrus noctiluca communis* De Geer, 1774 (p. 31)
Elater fuscus major De Geer, 1774 (p. 146)
Elater fuscus minor De Geer, 1774 (p. 146)
Elater aeneus rufipes De Geer, 1774 (p. 149)
Elater fuscus flavipes De Geer, 1774 (p. 151)
Silpha nigra major De Geer, 1774 (p. 173)

De Geer, 1775

- Leptura aquatica spinosa* De Geer, 1775 (p. 140)
Leptura aquatica mutica De Geer, 1775 (p. 142)
Leptura aquatica fasciata De Geer, 1775 (p. 142)
Leptura aquatica ænea De Geer, 1775 (p. 143)
Chrysomela marginella Ranunculi De Geer, 1775 (p. 304)
Chrysomela viridis Alni De Geer, 1775 (p. 306)
Chrysomela cærulea Betulæ De Geer, 1775 (p. 317)
Chrysomela cærulea Salicis De Geer, 1775 (p. 318)
Chrysomela grisea Alni De Geer, 1775 (p. 325)
Chrysomela cylindrica 4-punctata De Geer, 1775 (p. 329)
Chrysomela rubra liliorum De Geer, 1775 (p. 339)
Chrysomela 22-punctata obscura De Geer, 1775 (p. 380)

De Geer, 1776

- Musca major larvarum* De Geer, 1776 (p. 24)
Musca minor larvarum De Geer, 1776 (p. 25)
Musca minor domestica De Geer, 1776 (p. 26)
Musca carnaria cærulea De Geer, 1776 (p. 57)
Musca vivipara major De Geer, 1776 (p. 63)
Musca vivipara minor De Geer, 1776 (p. 70)
Musca domestica major De Geer, 1776 (p. 72)
Bombylius tabaniformis-griseus De Geer, 1776 (p. 270)
Bombylius tabaniformis-rufus De Geer, 1776 (p. 272)

Tipula agarici seticornis De Geer, 1776 (p. 367)

Tipula nigra aquatica De Geer, 1776 (p. 387)

Tipula Marci nigra De Geer, 1776 (p. 428)

Tipula Marci fulvipes De Geer, 1776 (p. 429)

Coccus ovatus Ulmi De Geer, 1776 (p. 436)

Coccus rotundus Salicis De Geer, 1776 (p. 440)

Coccus farinosus Alni De Geer, 1776 (p. 442)

De Geer, 1778

Podura arborea nigra De Geer, 1778 (p. 18)

Podura arborea grisea De Geer, 1778 (p. 21)

Podura aquatica nigra De Geer, 1778 (p. 23)

Podura aquatica grisea De Geer, 1778 (p. 28)

Podura globosa fusca De Geer, 1778 (p. 35)

Pediculus humanus corporis De Geer, 1778 (p. 67)

Acarus aquaticus ruber De Geer, 1778 (p. 141)

Acarus aquaticus globosus De Geer, 1778 (p. 146)

Acarus aquaticus maculatus De Geer, 1778 (p. 147)

Acarus aquaticus holosericeus De Geer, 1778 (p. 149)

Acarus aquaticus marginatus De Geer, 1778 (p. 152)

Aranea viridis punctata De Geer, 1778 (p. 233)

Aranea resupina sylvestris De Geer, 1778 (p. 245)

Aranea resupina domestica De Geer, 1778 (p. 251)

Monoculus Pulex ramosus De Geer, 1778 (p. 442)

Monoculus Pediculus ramosus De Geer, 1778 (p. 467)

Cimex capensis ruber De Geer, 1778 (p. 619)

Sphinx adscita De Geer, 1778 (p. 694) (used as a generic name)

Retzius, 1783

Papilio Argus marginatus Retzius, 1783 (p. 30)

Papilio margaritaceus medius Retzius, 1783 (p. 31)

Phalaena tesseraria pratensis Retzius, 1783 (p. 36)

Phalaena Ziczac trituberculata Retzius, 1783 (p. 37)

Phalaena Ziczac quinetuberculata Retzius, 1783 (p. 38)

Phalaena diura major Retzius, 1783 (p. 38)

Phalaena diura minor Retzius, 1783 (p. 38)

Phalaena porrecta alba Retzius, 1783 (p. 38)

Phalaena porrecta cana Retzius, 1783 (p. 38)

Phalaena alticauda alba Retzius, 1783 (p. 39)

Phalaena alticauda grisea Retzius, 1783 (p. 39)

Phalaena alticauda furcata Retzius, 1783 (p. 39)

Phalaena fusca trimaculata Retzius, 1783 (p. 40)

Phalaena cinerea bistigmata Retzius, 1783 (p. 40)

Phalaena flava nigro-punctata Retzius, 1783 (p. 40)

Phalaena fusca bistrigata Retzius, 1783 (p. 41)

Phalaena alba nigro-punctata Retzius, 1783 (p. 41)

- Phalaena grisea fasciata* Retzius, 1783 (p. 41)
Phalaena cristata albo-lineata Retzius, 1783 (p. 41)
Phalaena cristata flavo-punctata Retzius, 1783 (p. 42)
Phalaena cinerea undulata Retzius, 1783 (p. 43)
Phalaena Noctua major Retzius, 1783 (p. 44)
Phalaena viridis bilineata Retzius, 1783 (p. 45)
Phalaena varia albo-maculata Retzius, 1783 (p. 45)
Phalaena cinerea bimaculata Retzius, 1783 (p. 46)
Phalaena viridis maculata Retzius, 1783 (p. 46)
Phalaena ferruginea fasciata Retzius, 1783 (p. 47)
Phalaena flava strigata Retzius, 1783 (p. 48)
Phalaena sulphurea caudata Retzius, 1783 (p. 49)
Phalaena alba trilineata Retzius, 1783 (p. 50)
Phalaena albida biundulata Retzius, 1783 (p. 50)
Phalaena violacea nigro-strigata Retzius, 1783 (p. 50)
Phalaena Tinea Pini Retzius, 1783 (p. 50)
Phalaena argentea convoluta Retzius, 1783 (p. 51)
Phalaena cana nigro-punctata Retzius, 1783 (p. 51)
Phalaena dimidio-alba maculata Retzius, 1783 (p. 53)
Phalaena nigra cristata Retzius, 1783 (p. 53)
Phalaena strobilorum Pini major Retzius, 1783 (p. 53)
Phalaena strobilorum Pini minor Retzius, 1783 (p. 54)
Phalaena pelicaria Pyri Retzius, 1783 (p. 54)
Phalaena chrysagyria Alni Retzius, 1783 (p. 55)
Phalaena chrysagyria Pomi Retzius, 1783 (p. 55)
Phalaena grisea Rosae Retzius, 1783 (p. 55)
Phalaena maculata Frangulae Retzius, 1783 (p. 55)
Phalaena bicristata Chaerophylli Retzius, 1783 (p. 55)
Phryganea nigra fasciata Retzius, 1783 (p. 56)
Apis muraria nitida Retzius, 1783 (p. 60)
Vespa crabro medius Retzius, 1783 (p. 63)
Vespa crabro major Retzius, 1783 (p. 63)
Sphex rufa fasciata Retzius, 1783 (p. 65)
Ichneumon aureus Bedeguaris Retzius, 1783 (p. 69)
Ichneumon aeneus myriventris Retzius, 1783 (p. 70)
Ichneumon aeneus globiceps Retzius, 1783 (p. 70)
Ichneumon fuscus ramicornis Retzius, 1783 (p. 70)
Ichneumon aeneus ramicornis Retzius, 1783 (p. 70)
Tenthredo pectinata major Retzius, 1783 (p. 74)
Tenthredo pectinata minor Retzius, 1783 (p. 74)
Tenthredo pectinata rufa Retzius, 1783 (p. 74)
Formica nigra major Retzius, 1783 (p. 75)
Formica nigra minor Retzius, 1783 (p. 75)
Formica rubra aculeata Retzius, 1783 (p. 76)
Formica fusca aculeata Retzius, 1783 (p. 76)
Cicada laternaria surinamensis Retzius, 1783 (p. 79)
Tipula clavata maculata Retzius, 1783 (p. 195)

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References

- Abdel-Ghaffar, F., Semmler, M., Al-Rasheid, K., Klimpel, S. & Mehlhorn, H. 2010. Comparative in vitro tests on the efficiency and safety of 13 anti-head-lice products. *Parasitology Research*, **106**: 423–429.
- Beytur, A., Geçit, I., Karaman, Ü., Şener, S., Yakupoğulları, Y. Karadan, M. & Karcı, E. 2011. The presence of the pubic louse *Phthirus pubis* in two patients complaining from tick infestation. *European Journal of General Medicine* **8**: 160–162.
- Buchanan, R.E., St. John-Brooks, R. & Breed, R.S. 1948. International bacteriological code of nomenclature. *Journal of Bacteriology*, **55**: 287–306.
- Cueto, G.M. & Picollo, M.I. 2010. Response of *Pediculus humanus humanus* (Pediculidae: Phthiraptera) to water or 70% ethanol immersion and determination of optimal times for measuring toxic effects. *Parasitology Research* **106**: 1503–1506.
- De Geer, C. 1752. *Mémoires pour servir à l'histoire des insectes*. Pp. [1–15], 1–707, [1], pls. 1–37. Grefing, Stockholm.
- De Geer, C. 1771. *Mémoires pour servir à l'histoire des insectes; précédés de discours sur les insectes en général*. Tome second; première partie. Pp. I–XII [= 1–12], 1–616, pls. 1–15. Hesselberg, Stockholm.
- De Geer, C. 1771. *Mémoires pour servir à l'histoire des insectes*. Tome second; seconde partie. Pp. [1–3], 617–1175, [1], pls. 16–43. Hesselberg, Stockholm.
- De Geer, C. 1773. *Mémoires pour servir à l'histoire des insectes*. Tome troisième. Pp. I–VIII [= 1–8], 1–696, [1–2], pls. 1–44. Hesselberg, Stockholm.
- De Geer, C. 1774. *Mémoires pour servir à l'histoire des insectes*. Tome quatrième. Pp. I–XII [= 1–12], 1–456, [1], pls. 1–19. Hesselberg, Stockholm.
- De Geer, C. 1775. *Mémoires pour servir à l'histoire des insectes*. Tome cinquième. Pp. I–VII [= 1–7], [1], 1–448, pls. 1–16. Hesselberg, Stockholm.
- De Geer, C. 1776. *Mémoires pour servir à l'histoire des insectes*. Tome sixième. Pp. I–VIII [= 1–8], 1–522, [1], pls. 1–30. Hesselberg, Stockholm.
- De Geer, C. 1778. *Mémoires pour servir à l'histoire des insectes*. Tome septième. Pp. I–XII [= 1–12], 1–950, pls. 1–49. Hesselberg, Stockholm.
- Dubois, A. & Bour, R. 2010. The nomenclatural status of the nomina of amphibians and reptiles created by Garsault (1764), with a parsimonious solution to an old nomenclatural problem regarding the genus *Bufo* (Amphibia, Anura), comments on the taxonomy of this genus, and comments on some nomina created by Laurenti (1768). *Zootaxa*, **2447**: 1–52.
- Durden, L. A. & Musser, G.G. 1994. The sucking lice (Insecta, Anoplura) of the world: a taxonomic checklist with records of mammalian hosts and geographical distributions. *Bulletin of the American Museum of Natural History*, **218**: 1–90.
- Fabricius, J.C. 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi & Lipsiae.
- Fricke, R. 2008. Authorship, availability and validity of fish names described by Peter (Pehr) Simon Forsskål and Johann Christian Fabricius in the 'Descriptiones animalium' by Carsten Niebuhr in 1775 (Pisces). *Stuttgarter Beiträge zur Naturkunde (A Neue Serie)*, **1**: 1–76.
- Hopkins, G.H.E. & Clay, T. 1960. Mallophagan names of De Geer, 1778: Proposed addition to Official Lists. *Bulletin of Zoological Nomenclature*, **17**: 326–333.

- Huldén, L.** 1984. A check list of the Finnish insects. Small orders. *Notulae Entomologicae*, **64**: 1–29.
- ICZN.** 1928. Opinion 104. 57 generic names placed in the Official List. *Smithsonian Miscellaneous Collections*, **73**(5): 25–28.
- ICZN.** 1957. Direction 63. Completion and in certain cases correction of entries relating to the names of genera belonging to the Class Insecta made in the ‘Official List of Generic Names in Zoology’ in the period up to the end of 1936. *Opinions and Declarations rendered by the International Commission on Zoological Nomenclature*, **1E**: 21–60.
- Laurenti, J.N.** 1768. *Specimen medicum, exhibens synopsin reptilium emendatam cum experimentis circa venena et antidota reptilium Austriacorum*. Pp. [1–2], 1–214, [1], Tab. I–V [= 1–5]. Trattner, Viennæ.
- Leske, N.G.** 1778. *Iacobi Theodori Klein naturalis dispositio echinodermatum. Accesserunt lvcvbrativncvla de acvleis echinorum marinorum et spicilegium de belemnitis*. Pp. [1–4], I–XX [=1–20], 1–278, [1–3], Tab. I–LIV [=1–54]. Gleditsch, Lipsiae.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Linnaeus, C.** 1761. *Fauna Svecica sistens Animalia Sveciae Regni: Mammalia, Aves, Amphibia, Pisces, Insecta, Vermes. Distributa per classes & ordines, genera & species*. Ed. 2. [48], 578 pp. Salvii, Stockholmiae.
- Linnaeus, C.** 1767. *Systema Naturae*, Ed. 12, vol. 1, part 2. Pp. 533–1327. Salvii, Holmiae.
- Parkinson, J.** 1830. *Outlines of oryctology. An introduction to the study of fossil organic remains; especially of those found in the British strata [. . .]*. Pp. I–VIII [=1–8], 1–350, [1–3], Pl. I–X [=1–10]. Nattali, London; Combe, Leicester.
- Retzius, A.J.** 1783. *Caroli Lib. Bar. De Geer [. . .] genera et species insectorum e generosissimi avctoris scriptis extraxit, digessit, latine qvoad partem reddidit, et terminologiam insectorum Linneanam addidit Anders Iahan Retzius [. . .]*. Pp. [1–5], III–VI [=3–6], 7–220. Crusius, Lipsiae.
- Schäffer, J.C.** 1764. *Abhandlungen von Insecten. Erster Band. Nebst XVI. Kupfertafeln mit ausgemahlten Abbildungen*. pp. [1–2], I–XL [=1–40], 1–402, pl. [1–16]. Montag, Regensburg.
- Schaeffer, J.C.** [1766]. *Icones insectorum circa Ratisbonam indigenorum coloribus natvram referentibus expressae. Volvm. I. Pars I. - Natürlich ausgemahlte Abbildungen Regensburger Insecten. Ersten Bandes erster Theil*. pp. [1–8], I–L [=1–50], Tab. I–L [=1–50]. Zunkel, Regensburg.
- Welter-Schultes, F. & Feuerstein, V.** 2008. Nomenclatural notes on *Torpedo* (Chondrichthyes: Torpedinidae) and some other early established fish taxa (Actinopterygii: Molidae, Eginopidae and Citharinidae). *Species, Phylogeny & Evolution*, **1** (3): 141–145.
- Welter-Schultes, F.W. & Klug, R.** 2011. Comments on new names and nomenclatural acts of amphibians and non-avian sauropsids established by Garsault 1764 and Laurenti 1768 (response to Dubois & Bour 2010). *Zootaxa*, **2814**: 50–58.

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Case 3574***Cereus Ilmoni, 1830 (Cnidaria, Anthozoa): proposed designation of a new type species***

Daphne Gail Fautin

*Department of Ecology and Evolutionary Biology and Biodiversity Institute,
University of Kansas, Lawrence, Kansas 66045, U.S.A.*

(e-mail: fautin@ku.edu)

R.B. Williams

Norfolk House, Western Road, Tring, Hertfordshire HP23 4BN, U.K.

(e-mail: ray.coxitec@tesco.net)

Tina Molodtsova

*P.P. Shirshov Institute of Oceanology RAS, 36 Nakhimovsky pr., Moscow,
117997 RUSSIA* (e-mail: tina@ocean.ru)

Abstract. The purpose of this application, under Articles 78.1 and 81.1 of the Code, is to designate *Actinia pedunculata* Pennant, 1777 as the type species of the genus *Cereus* Ilmoni, 1830. *Cereus pedunculatus* is a widely-studied member of the order Actiniaria (sea anemones sensu stricto). The type species of *Cereus* by monotypy is currently *Cereus cupreus*, a nomen dubium not used since 1857 except in synonymy lists, and a member of the order Ceriantharia (tube anemones). We also request that the name *Actinocereus* Blainville, 1830 be suppressed for the purposes of the Principle of Priority.

Keywords. Nomenclature; taxonomy; *Cereus*; Actiniaria; Ceriantharia; *Cereus*; *Actinia pedunculata*; sea anemones; tube anemones; northeast Atlantic and Mediterranean.

1. The generic name *Cereus* was first published for an animal by Oken (1815, p. 349); it contained a single species, *Actinia bellis* Ellis & Solander, 1786. The work of Oken was rejected for nomenclatural purposes in Opinion 417 (BZN 14: 1–42; September 1956) because the author did not apply the principles of binominal nomenclature.

2. Blainville (1830, p. 294) introduced the name *Actinocereus*, about which he wrote ‘Ce genre, établi par M. Oken sous le nom de *Cereus*. . .’ [‘This genus, established by Mr Oken under the name of *Cereus*. . .’]. Thus Blainville seems to have intended *Actinocereus* as a replacement name for *Cereus* Oken, 1815, although his motivation is unclear: at that time, the action by the International Commission on Zoological Nomenclature on the matter of Oken’s names was more than a century in the future. If *Actinocereus* Blainville, 1830 were regarded as a replacement name for *Cereus* Oken, its type species would be *Actinia bellis* Ellis & Solander, 1786, under Article 67.8 of the Code, which states ‘both the prior nominal taxon and its replacement have

the same type species'. However, while *Actinocereus* Blainville, 1830 is an available name, it cannot serve as a replacement for the unavailable (under Opinion 417) name *Cereus* Oken. Replacement names are those proposed for 'previously established names' (Article 67.8), and an 'established name' is defined in the Glossary as one made available by satisfying the requirements of the Code. *Actinia bellis* appeared in the list of species included in *Actinocereus* but only as a junior synonym of *Actinia pedunculata* Pennant, 1777 (p. 41) and no type species was ever designated from among the seven originally included nominal species (including synonyms). Since that first mention *Actinocereus* has been used only once, by Blainville (1834) in another catalogue; as in his earlier work, *Actinocereus pedunculatus* (Pennant, 1777) is listed among the members of the genus. *Actinocereus* was not mentioned in any later catalogues of anemones, such as those of Andres (1883) and Carlgren (1949), and no valid species are currently referred to this genus (Fautin, 2011).

3. Also in 1830, the name *Cereus* was again proposed, this time by Ilmoni (1830, p. 697) for *Cereus cupreus* Ilmoni, 1830 (p. 698), which is the type species by monotypy. The original description was repeated and published in virtually identical form the following year (Ilmoni, 1831). Because only *Cereus cupreus* was listed in the genus, this seems not to have been the same taxon that Oken (1815) meant by that generic name. No type specimen of the species is known to exist (Fautin, 2011).

4. From Ilmoni's description of *Cereus cupreus* it is clear that the species is a member of the order Ceriantharia, the common name of which is 'tube anemones'. However, beyond that, the identity of *Cereus cupreus* is uncertain. Following the questioned synonymy of Andres (1881), Pax & Mueller (1955) synonymised it with *Tubularia membranacea* Gmelin, 1796 (currently *Cerianthus membranaceus*). Andres (1881) also questionably synonymised *Cereus cupreus* with *Tubularia solitaria* Rapp, 1829 (currently *Cerianthus solitarius*).

5. According to Fautin (2011), the generic name *Cereus* has been used in combination with 42 species names, 41 of which refer to animals belonging to the order Actiniaria, commonly known as true 'sea anemones'. According to Fautin (2011), only four of those species are now placed in *Cereus*: *Actinia pedunculata* Pennant, 1777, *Actinia filiformis* Rapp, 1829, *Actinia amethystina* Quoy & Gaimard, 1833 and *Sagartia herpetodes* McMurrich, 1904. *Actinia amethystina* and *Actinia filiformis* were transferred to *Cereus* Ilmoni, 1830 by Milne Edwards (1857). Since then, the only mention of the former was in the comprehensive catalogue by Andres (1883), as being of uncertain generic affinity; and the only mention of the latter was also by Andres (1883), who declared it a nomen dubium. We therefore consider both to be nomina dubia. Carlgren (1959) moved *Sagartia herpetodes* to the genus *Cereus*; Häussermann & Försterra (2003) expressed doubt that *Cereus herpetodes* belongs to the same genus as *C. pedunculatus*.

6. Thus the only certain member of the genus *Cereus* Ilmoni, 1830 is the sea anemone *C. pedunculatus* (Pennant, 1777) (p. 41), which was transferred to the genus by Fischer (1874). Pennant's (1777) Vol. 4 was issued both in quarto and octavo formats, and these were paginated differently. We follow Sherborn (1902, p. xliii) in considering the larger format to be definitive.

7. Common along European shores and also reported from the Azores and Canary Islands, *Cereus pedunculatus* has been the subject of a very large amount of research. (a list of references downloaded from Fautin (2011), including ecological and

physiological works, is filed with the Secretariat). In catalogues of sea anemones of the world, both Stephenson (1920) and Carlgren (1949) listed *Cereus pedunculatus* as the only member of the genus (Stephenson also identified it explicitly as the 'genotype').

8. In his treatment of *Cereus* in *British Anthozoa: Keys and notes for the identification of the species*, Manuel (1981, p. 150) stated that R.B. Williams was preparing 'An application to validate the name' and also noted that *Cereus* 'was first proposed by Oken (1815) in a publication that has since been declared nomenclaturally invalid.' In fact, Williams did not submit this application, nor the manuscript, *A nomenclatural review of the British sea anemones*, incorrectly referred to by Manuel (1981) as 'Williams (in press)'. Moreover, we are confident that Manuel (1981), who listed the type species as '*Cereus pedunculatus*', was unaware of the publications by Ilmoni because he was using the unpublished notes of Williams, who did not know of them. Since the actual dates of Ilmoni's (1830) and Blainville's (1830) papers cannot at present be objectively determined, we propose that the name *Actinocereus* Blainville (1830) be suppressed by the Commission for the purposes of the Principle of Priority.

9. Because the type species of *Cereus* Ilmoni, 1830 is a ceriantharian, *Actinia pedunculata* Pennant, 1777, an actinarian, should be placed in a different genus. However, *Cereus* can be used unambiguously for *pedunculatus* because *C. cupreus*, its original type species, is a nomen dubium and this combination has not been used for more than 150 years. Changing such a well-known combination as *Cereus pedunculatus* now, after more than a century and a quarter of use, would be highly disruptive.

10. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

- (a) to set aside all previous type fixations for *Cereus* Ilmoni, 1830 and designate *Actinia pedunculata* Pennant, 1777, as its type species;
- (b) to suppress the generic name *Actinocereus* Blainville (1830) for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

(2) to place on the Official List of Generic Names in Zoology the name *Cereus* Ilmoni, 1830 (gender: masculine), type species *Actinia pedunculata* Pennant, 1777, as ruled in (1)(a) above;

(3) to place on the Official List of Specific Names in Zoology the name *pedunculata* Pennant, 1777, as published in the binomen *Actinia pedunculata* (specific name of the type species of *Cereus* Ilmoni, 1830, as ruled in (1)(a) above);

(4) to place on the Official Index of Rejected and Unavailable Generic Names in Zoology the name *Actinocereus* Blainville (1830), as suppressed in (1)(b) above.

References

- Andres, A. 1881. Prodrum neapolitanae actiniarum faunae addito generalis actiniarum bibliographiae catalogo. *Mitteilungen aus der Zoologischen Station zu Neapel*, 2: 305–371.
- Andres, A. 1883. Le attinie. *Atti della Reale Accademia dei Lincei. Serie terza. Memorie della Classe di Scienze Fisiche, Matematiche e Naturali*, 14: 211–673.
- Blainville, H.M.D. de. 1830. *Dictionnaire des sciences naturelles*, vol. 60. 631 pp. F.G. Levrault, Strasbourg & Paris.

- Blainville, H.M.D. de.** 1834. *Manuel d'actinologie ou de zoophytologie*. 644 pp. F.G. Levrault, Paris & Strasbourg.
- Carlgren, O.** 1949. A survey of the Ptychodactiaria, Corallimorpharia and Actiniaria. *Kungliga Svenska Vetenskapsakademiens Handlingar*, (4)1(1): 1–121.
- Carlgren, O.** 1959. Reports of the Lund University Chile Expedition 1948–49 38. Corallimorpharia and Actiniaria with description of a new genus and species from Peru. *Arkiv für Zoologie*, series N.F., 71(6): 1–38.
- Ellis, J. & Solander, D.** 1786. *The natural history of many curious and uncommon zoophytes, collected from various parts of the globe*. 206 pp. Benjamin White & Son, London.
- Fautin, D.G.** 2011. Hexacorallians of the World. <http://geoportal.kgs.ku.edu/hexacorallanemone2/index.cfm> (accessed 16 January, 2011).
- Fischer, P.** 1874. Recherches sur les actinies des cotes océaniques de France. *Nouvelles Archives du Muséum d'Histoire Naturelle de Paris*, 10: 193–244.
- Gmelin, J.F.** 1796. *Caroli a Linné Systema Naturæ, 13th edition, revised*, volume 1, part 6. 4120 pp. Bernuset, Delamolliere, Falque & Co., Lugduni.
- Haüssermann, V. & Försterra, G.** 2003. First evidence for coloniality in sea anemones. *Marine Ecology Progress Series*, 257: 291–294.
- Ilmoni, [I.].** 1830. Dr. Ilmoni aus Finnland schickte folgende Beiträge zur Naturgeschichte der Actinien ein. *Isis von Oken*, 23: 694–699.
- Ilmoni, [I.].** 1831. Sur deux espèces nouvelles de la famille des actinies. *Bulletin des Sciences Naturelles (Paris)*, 24: 123.
- McMurrich, J.P.** 1904. The Actiniae of the Plate collection. *Zoologische Jahrbücher*, 6 suppl.: 215–306.
- Manuel, R.L.** 1981. *British Anthozoa: keys and notes for the identification of the species*. 241 pp. Academic Press, London.
- Milne Edwards, H.** 1857. *Histoire naturelle des corallaires ou polypes proprement dits*, vol. 1. 326 pp. Librairie Encyclopédique de Roret, Paris.
- Oken, L.** 1815. *Lehrbuch der Naturgeschichte*, vol. 3: Zoologie. 842 pp. Bersasser, Jena.
- Pax, F. & Mueller, I.** 1955. Gli antozoi del Museo Civico di Storia Naturale di Trieste Parte I: Antipatharia, Ceriantharia, Zoantharia, Actiniaria, Alcyonaria, e Pennatularia. *Atti del Museo Civico di Storia Naturale Trieste*, 20: 103–129.
- Pennant, T.** 1777. *A British zoology*, vol. 4. Edition 4, quarto format, 136 pp. Benj. White, London.
- Quoy, R.J.C. & Gaimard, P.** 1833. *Voyage de découvertes de l'Astrolabe exécuté par ordre du roi, pendant les années 1826–1827–1828–1829, sous le commandement de M. J. Dumont D'Urville*, vol. 4. Zoophytes. 390 pp. J. Tastu, Paris.
- Rapp, W.** 1829. *Ueber die Polypen im Allgemeinen und die Actinien*. 62 pp. Grolsherzogl. Sdch, Weimar.
- Sherborn, C.D.** 1902. *Index animalium, sectio prima*. lix, 1195 pp. C.J. Clay & Sons, London and Cambridge University Press.
- Stephenson, T.A.** 1920. On the classification of Actiniaria. Part I: Forms with acontia and forms with a mesogloal sphincter. *Quarterly Journal of Microscopical Science*, 64(4): 425–574.

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Case 3575

***Haltica undulata* Kutschera, 1860 (currently *Phyllotreta undulata*, Insecta, Coleoptera, CHRYSOMELIDAE): proposed precedence over *Haltica bivittata* Waterhouse, 1838 (currently *Phyllotreta bivittata*)**

Chris Reid

Entomology, Australian Museum, 6 College Street, Sydney, NSW, Australia 2010 (e-mail: chris.reid@austmus.gov.au)

Roger Booth

Department of Entomology, Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: r.booth@nhm.ac.uk)

Manfred Döberl

Seeweg 34, 93326 Abensberg, Germany (e-mail: mdcol@-online.de)

Abstract. The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the name *Phyllotreta undulata* (Kutschera, 1860), for a common and widespread flea-beetle species (CHRYSOMELIDAE, GALERUCINAE), which is also a crop pest, by giving it precedence over the unused older name *P. bivittata* (Waterhouse, 1838), whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Coleoptera; CHRYSOMELIDAE; GALERUCINAE; *Phyllotreta*; *P. undulata*; Eurasia; North America; Australia; Pacific region.

1. In 1836 Charles Darwin collected beetles at the fledgling colony of King George Sound, Western Australia (founded 1826). On his return to England, the flea-beetles (CHRYSOMELIDAE, GALERUCINAE, ALTICINI) were described by George Waterhouse at the Natural History Museum, London (Waterhouse, 1838). One of these species was *Haltica bivittata* Waterhouse, 1838 (p. 133), later placed in *Phyllotreta* Chevrolat, 1836 (Masters, 1887), but without examination by Masters of the original material.

2. The species represented by the name *Phyllotreta bivittata* has rarely been referred to. Blackburn (1890) compared its description with *Phyllotreta australis* Blackburn, 1890. Heikertinger & Csiki, 1940, catalogued *P. bivittata* in a work which included taxonomic decisions and references to the biology and biogeography of species. Heikertinger (1941) examined the type material of *P. bivittata* and compared this species with *P. vilis* Weise, 1888. In this work, the last taxonomic work to treat *P. bivittata*, Heikertinger regarded it as a valid species endemic to Australia. Otherwise, since 1838 the name has been an infrequent checklist entry as a valid species name (Masters, 1887; Reid, 2008). *Phyllotreta bivittata* was not included in Blackburn's revision of the Australian ALTICINI, which remains the only revision of this tribe in Australia (Blackburn, 1896).

3. Waterhouse's 3 syntypes of *Haltica bivittata*, in the Natural History Museum, London, have been examined by CR and RB and a male dissected to examine the

genitalia, structurally diagnostic in the genus *Phyllotreta* (Mohr, 1966). The syntypes all have Darwin's coded collecting labels, plus printed labels indicating they were collected by Darwin at King George Sound. This type material is morphologically within the range of variation known for the species currently known as *Phyllotreta undulata* (Kutschera, 1860), with identical male genitalia, and these two names are evidently subjective synonyms.

4. *Haltica undulata* was described by Kutschera in 1860 (p. 301) for a European species of the tribe ALTICINI, subfamily GALERUCINAE, family CHRYSOMELIDAE. Kutschera described *undulata* in the genus *Haltica*, in his fifth group of that genus, which he noted was equivalent to the available generic name *Phyllotreta* Chevrolat, 1836 ['V. Gruppe (*Phyllotreta* Chevrol. Dej. Cat.)']. Kutschera explicitly used the word Gruppe [group] for this taxonomic concept, not subgenus, or genus, and we consider that its treatment as a species-group within a genus was an act of synonymy.

5. The first unequivocal transfer of *Haltica undulata* to *Phyllotreta* Chevrolat, 1836, was by Allard (1866) and it has since remained in this genus as *Phyllotreta undulata* (Kutschera, 1860). Older names exist for this species, but they are junior homonyms and not available (as listed in catalogues: Heikertinger & Csiki, 1940; Gruev & Döberl, 1997). There are also two available names describing colour variations, which postdate *P. undulata* (Heikertinger & Csiki, 1940; Gruev & Döberl, 1997; Döberl, 2010).

6. *Phyllotreta undulata* belongs to a group of small, similarly coloured, species which are relatively difficult to distinguish and are endemic to Eurasia. However, numerous regional faunas adequately separate *P. undulata* from its relatives on external characters and diagnostic male genitalia (Heikertinger, 1941; Mohr, 1966; Medvedev, 1982; Doguet, 1994; Warchalowski, 1995; Bienkowski, 2004; Döberl, 2010), which are identical to those of *P. bivittata*.

7. The name *Phyllotreta undulata* is well-known throughout Europe, stable and associated with a large body of literature concerning its distribution, biology, pest status on the plant family BRASSICACEAE, and associated microfauna. Heikertinger & Csiki, 1940, list 31 taxonomic and biogeographic references and approximately 50 articles on biology of *P. undulata*; more recent references include: taxonomy and distribution (Mohr, 1966; Medvedev, 1982; Doguet, 1994; Warchalowski, 1995; Gruev & Döberl, 1997; Riley et al., 2003; Bienkowski 2004; Döberl, 2010; Borowiec, 2011); biology (Steinhausen 1978; Vig 2003; Clark et al., 2004 [23 papers cited for hostplant]); pest status (Augustin et al., 1986; Ekbom, 1995; Weiss, 2003); associated pathogens (Yaman et al., 2009). A search of the abstracting journal Zoological Record in January 2012 revealed that at least 25 works, by more than 15 authors, have been published in the last 25 years with the name *Phyllotreta undulata* in the title or abstract.

8. *Phyllotreta undulata* has been accidentally transported to other biogeographic regions by humans, including North America, Australia and the West Pacific (Samuelson, 1973; Riley et al., 2003). Several of these introductions were not originally recognised as such. Thus *Altica strigula* Montrouzier, 1864 (New Caledonia), *Phyllotreta australis* Blackburn, 1890 (Australia), *Phyllotreta vittigera* Broun, 1893 (New Zealand), and *Phyllotreta blackburni* Bryant, 1925 (Fiji), are now recognised as junior synonyms of *Phyllotreta undulata* (Samuelson, 1973), although

strigula has also, erroneously, been placed as a synonym of another valid species, *Phyllotreta striolata* (Döberl, 2010).

9. The subjective senior synonym *P. bivittata* has, with three exceptions, existed for the last 173 years only as a catalogue entry in the Australian fauna, whereas its junior synonym is a well-established name throughout much of the world, with an extensive associated literature. Replacement of *Phyllotreta undulata* with *Phyllotreta bivittata* would be a considerable inconvenience to agriculturalists, horticulturalists, ecologists and other biologists, principally in Europe, where *bivittata* is an unknown name.

10. The junior synonym, *P. undulata*, has been used as the presumed valid name in at least 25 works by at least 10 authors in the last 50 years, meeting the requirements of Article 23.9.1.2, however Article 23.9.1.1 is not met: the senior synonym, *P. bivittata*, has been used as a valid name since 1899 (by Heikertinger & Csiki, 1940; Heikertinger 1941), and this use is more than a mere listing in an abstracting publication or other index or list of names (Article 23.9.6). Therefore, in accordance with Article 23.9.3 of the Code, this case is referred to the Commission for a ruling under Article 81.2.3.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, precedence over the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, with the endorsement that it is to be given precedence over the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, with the endorsement that it is not to be given priority over the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, whenever the two are considered to be synonyms.

References

- Allard, E. 1866. Monographie des Alticides tribu de la famille des Phytophages. [partim] *L'Abeille Journal d'Entomologie*, **3**: 181–428.
- Augustin, A., Tulisalo, U. & Korpela, S. 1986. Flea beetles (Coleoptera, Chrysomelidae, Halticinae) on rapeseed and sugarbeet in Finland. *Journal of Agricultural Science in Finland*, **58**(2): 69–82.
- Bienkowski, A.O. 2004. *Leaf-beetles (Coleoptera: Chrysomelidae) of the Eastern Europe. New key to subfamilies, genera and species*. 278 pp. Mikron Print, Moscow.
- Blackburn, T. 1890. Notes on Australian Coleoptera with descriptions of new genera and species. *Transactions of the Royal Society of South Australia*, **13** [1889–1890]: 121–160.
- Blackburn, T. 1896. Further notes on Australian Coleoptera with descriptions of new genera and species. *Transactions of the Royal Society of South Australia*, [1895–1896] **20**: 35–109.
- Borowiec, L. 2011. Chrysomelidae of Europe. Alticinae. *Phyllotreta undulata* (Kutschera, 1860). <http://culex.biol.uni.wroc.pl/cassidae/European%20Chrysomelidae/phyllotreta%20undulata.htm> [accessed December 2011]

- Broun, T. 1893. *Manual of the New Zealand Coleoptera. Parts V-VII*. Pp. 975–1504. Government Printer, Wellington.
- Bryant, G.E. 1925. New species of Phytophaga from the Fiji Islands. *The Annals and Magazine of Natural History*, (9)15: 590–600.
- Chevrolat, L.A.A. 1836. [new taxa]. Pp. 361–442 in Dejean, P.F.A.M. *Catalogue des Coléoptères de la collection de M. Le Comte Dejean. Deuxième édition*. Livraison 5. Méquignon-Marvis Pere et Fils, Paris.
- Clark, S.M., LeDoux, D.G., Seeno, T.N., Riley, E.G., Gilbert, A.J. & Sullivan, J.M. 2004. *Host plants of leaf beetle species occurring in the United States and Canada (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae, excluding Bruchinae)*. 476 pp. The Coleopterist's Society, Sacramento.
- Döberl, M. 2010. Subfamily Alticinae Newman, 1835. Pp. 491–563 in Löbl, I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera. Volume 6. Chrysomeloidea*. Apollo Books, Steenstrup.
- Doguet, S. 1994. Coléoptères Chrysomelidae. Volume 2 Alticinae. *Faune de France*, 80: 1–694.
- Ekbom, B. 1995. Flea beetle (*Phyllotreta undulata*) feeding preferences. *IOBC-WPRS Bulletin*, 18(4): 88–94.
- Gruev, B. & Döberl, M. 1997. General distribution of the flea beetles in the Palaearctic Subregion (Coleoptera, Chrysomelidae: Alticinae). *Scopolia*, 37: 1–496.
- Heikertinger, F. 1941. Die *Phyllotreta*-Arten des indoaustralischen Faunengebietes. (Col. Chrysom. Haltic.). *Entomologische Blätter*, 38: 138–152.
- Heikertinger, F. & Csiki, E. 1940. *Coleopterorum Catalogus Pars 166 & 169: Chrysomelidae: Halticinae I & II*. 635 pp. Junk, 's-Gravenhage.
- Kutschera, F. 1860. Beiträge zur Kenntniss der europäischen Halticinen. *Wiener Entomologische Monatschrift*, 10(4): 297–310.
- Masters, G. 1887. Catalogue of the described Coleoptera of Australia. Part VII. *Proceedings of the Linnean Society of New South Wales*, (2)2: 565–646.
- Medvedev, L.N. 1982. *Chrysomelidae of the Mongolian People's Republic: identification keys*. 303 pp. Nauka, Moscow.
- Mohr, K.H. 1966. 88 Familie Chrysomelidae. Pp. 95–299 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas. Band 9 Cerambycidae, Chrysomelidae*. Goecke & Evers, Krefeld.
- Montrouzier, X. 1864. [new taxa] in: Perroud, B.P. & Montrouzier, X., *Essai sur la faune entomologique de Kanala (Nouvelle-Calédonie) et description de quelques espèces nouvelles ou peu connues. Annales de la Société Linnéenne de Lyon (N.S.)*, 11: 46–257.
- Reid, C.A.M. 2008. Superfamily Chrysomeloidea. Australian Faunal Directory website (<http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/taxa/Chrysomeloidea>) [accessed December 2011].
- Riley, E.G., Clark, S.M. & Seeno, T.N. 2003. *Catalog of the leaf beetles of America north of Mexico (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae, excluding Bruchinae)*. The Coleopterists Society, Sacramento, 290 pp. CD ROM.
- Samuelson, S.A. 1973. Alticinae of Oceania (Coleoptera: Chrysomelidae). *Pacific Insects Monograph*, 30: 1–165.
- Steinhausen, W. 1978. Bestimmungstabelle für die Larven der Chrysomelidae (partim). Pp. 336–343 in Klausnitzer, B. (Ed.), *Ordnung Coleoptera (Larven)*. Junk, The Hague.
- Vig, K. 2003. Biology of *Phyllotreta* (Alticinae), with emphasis on Hungarian and middle European species. Pp. 565–576 in Jolivet, P., Santiago-Blay, J.A. & Schmitt, M. (Eds.), *New developments in the biology of Chrysomelidae*. SPB Academic Publishing, The Hague.
- Warchalowski, A. 1995. Chrysomelidae. Chrysomelid beetles (Insecta: Coleoptera). Part 5, subfamily Halticinae: genera *Phyllotreta*, *Aphthona* and *Longitarsus*. *Fauna Polski*, 17: 1–359.
- Waterhouse, G.R. 1838. Descriptions of some of the insects brought to this country by C. Darwin, Esq. *Transactions of the Entomological Society of London*, 2(2): 131–135.
- Weise, J. 1888. Chrysomelidae. Lieferung 5. *Naturgeschichte der Insecten Deutschland. Erste Abtheilung Coleoptera*, 6: 769–960.
- Weiss, E.A. 2003. *Spice crops*. 429 pp. CABI Publishing, Wallingford.

Yaman, M., Tosun, O. & Aydin, C. 2009. Occurrence of the pathogens and parasites of *Phyllotreta undulata* (Coleoptera: Chrysomelidae) in Turkey. *Turkish Journal of Zoology*, **33**(2): 139–146.

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Case 3579***Scarabaeus fimetarius* Linnaeus, 1758 (currently *Aphodius fimetarius*; Insecta, Coleoptera, SCARABAEIDAE): proposed conservation of usage of the specific name by designation of a neotype**

Robert B. Angus

School of Biological Sciences, Royal Holloway, University of London, Egham, Surrey TW20 0EX, U.K. & Department of Entomology, Natural History Museum, Cromwell Road, London SW7 5BD, U.K.
(e-mail: r.angus@rhul.ac.uk)

Christine J. Wilson

School of Biological Sciences, Royal Holloway, University of London, Egham, Surrey TW20 0EX, U.K. (e-mail: drcwilson@btinternet.com)

Frank-Thorsten Krell

Department of Zoology, Denver Museum of Nature & Science, 2001 Colorado Boulevard, Denver, CO 80205-5798, U.S.A.
(e-mail: Frank.Krell@dmns.org)

Abstract. The purpose of this application, under Articles 75.5 and 75.6 of the Code, is to conserve the current usage of the name *Aphodius fimetarius* (Linnaeus, 1758) for a Holarctic species of aphodiine dung beetle. Since a different species has been erroneously designated as the lectotype, it is proposed that the previous type fixations for the species *Aphodius fimetarius* (Linnaeus, 1758) be set aside and a neotype consistent with the current usage be designated. Given that the species diagnostic morphological characters show variation overlapping with those of the most similar species, *Aphodius pedellus* (De Geer, 1774), we suggest a modern, chromosomally determined specimen as the neotype.

Keywords. Nomenclature; taxonomy; SCARABAEIDAE; APHODIINAE; *Aphodius*; *Aphodius fimetarius*; *Aphodius pedellus*; *Aphodius foetens*; dung beetle; Recent; Holarctic.

1. Linnaeus (1758, p. 348) described *Scarabaeus fimetarius* from Europe ('Habitat in Europae stercoratis') and referred to Frisch (1736), Rösel (1749), Uddman (1753) and his own works *Fauna Svecica* (Linnaeus, 1746) and 'Iter Oelandicum' which is *Öländska Resa* (Linnaeus, 1745). According to Article 72.4.1 of the Code, the type series comprises the material considered by those authors together with the original Linnaean material present in the Linnaean collection housed by the Linnean Society of London. With the type locality determined by Linnaeus as Europe, the specimens of the type series originated primarily from Sweden and Germany. Sweden at the time owned parts of northern Germany. It should be noted that the type series included more than one species: '*A. fimetarius*' = *A. pedellus* (De Geer, 1774), sensu Wilson (2001; see para. 2 below); *A. foetens* (Fabricius, 1787) (see para. 3 below);

potentially a sibling species formerly subsumed under *A. fimetarius* (*A. fimetarius* sensu Wilson, 2001, see para. 2 below); possibly *A. foetidus* (Herbst, 1783) (Linnaeus's variety β , synonymised with *Aphodius scybalarius* Fabricius by Schönherr (1806, p. 68), which he misidentified; *A. scybalarius* was mistakenly used for *A. foetidus* by several authors, see BZN 51: 121–127); or even *Aphodius sordidus* (Fabricius, 1775), which occurs in Öland from where Linnaeus (1746) described it and which can have four dark dots on the elytra as indicated by Uddman (1753) (see Ljungberg & Hall, 2009). Landin (1956) came to the same conclusions, but missed the presence of one *A. foetens* in the Linnaean material. Despite this inconsistent type series, the usage of *Aphodius fimetarius* had been consistent and undisputed for at least a century until 2001. It is the type species of the genus *Aphodius* Hellwig, 1798, designated by Latreille (1810).

2. Wilson (2001, p. 137), in the course of her PhD research, found that *Aphodius fimetarius* (Linnaeus, 1758 p. 348), as used by all authors in the preceding hundred years, comprises two species clearly separable on their karyotypes. She reported on relevant type material and designated lectotypes for *Scarabaeus fimetarius* Linnaeus, 1758 (p. 348), and *Scarabaeus pedellus* De Geer, 1774 (p. 266), which she considered to be the correct names for the two species.

3. Unfortunately, neither Wilson (as author of the paper) nor Angus (as supervisor of Wilson's PhD) had checked the underside of Linnaeus's specimens, and it now transpires that the chosen lectotype of *S. fimetarius* belongs to *Aphodius foetens* (Fabricius, 1787, p. 8), immediately recognisable by its red abdomen.

4. The species with a red abdomen has never been referred to *A. fimetarius* (Linnaeus), being known as *A. aestivalis* Stephens, 1839 (e.g. Kloet & Hincks, 1945; Britton, 1956; Balthasar, 1964), *A. vaccinarius* Herbst, 1789 (e.g. Paulian, 1959) or by the currently used name of *A. foetens* (Fabricius) (e.g. Thomson, 1863; Fowler, 1890; Joy, 1932; Machatschke, 1969; Jessop, 1986; Baraud, 1992; Krell & Fery, 1992; Dellacasa, G. & Dellacasa, M., 2006). Although Linnaeus described *S. fimetarius* as having a black body and red elytra, it is not possible to demonstrate that the specimen chosen by Wilson (2001) as lectotype was not part of Linnaeus's original material of *S. fimetarius* as Linnaeus gave no indication of knowing a species with a red abdomen as well as red elytra. In fact, it is clear from Wilson's account of the Linnaean material that this specimen does form part of Linnaeus's series, and the most likely explanation is that Linnaeus did not notice its red abdomen. Therefore the Commission is asked to use its plenary power to set aside the current lectotype and replace it with a neotype (as proposed in para. 6 below), as required by Article 75.6 of the Code.

5. The present interpretation of *A. fimetarius* and *A. pedellus* (sensu Wilson, 2001) is in use by those authors who have recognised that the former *A. fimetarius* comprises two species, notably Whitehead (2005, 2006) who keys out the two species, Mann in Lane et al. (2002), Denton (2005), Dellacasa, M. & Dellacasa, G. (2006), Ljungberg (2006), Rössner (2006), Mann (2006, 2008), Darby (2009), Nilsson (2009), Roslin & Heliovaara (2009), Forshage (2010), and Ljungberg & Hall (2009) who key and illustrate *A. pedellus* as a member of the Swedish fauna. *Aphodius pedellus* has been entering the ecological and conservation literature (Ljungberg & Vessby, 2009; Stenström & Holmberg, 2010; Ødegaard et al., 2011). The current American use of *Aphodius fimetarius* (e.g. Gordon & Skelley, 2007) includes both sibling species (from

Californian material chromosomally identified by Wilson & Angus, 2004, and newly studied Arizona and Colorado material (R. B. Angus, unpublished karyotype), both belonging to *A. fimetarius* sensu Wilson; *A. pedellus* is identified from several States (Krell, unpublished).

6. Choice of neotype: Recommendation 75A of the Code is that a neotype should if possible be chosen from surviving paralectotypes unless there are compelling reasons to the contrary. In the present case, because all possible species diagnostic characters show overlapping variation (colour, tip of elytra, pronotal punctures, genae, aedeagus), karyotypic data are necessary to allow unequivocal identification, so that the choice of a modern, chromosomally determined specimen is justified. Although the paralectotypes on the Linnaean series are considered inadequate for neotype designation, they are among the material available to guide the choice of the species to be defined by the neotype. However, it should be noted that this material does not constitute the total available for consideration (see para. 1 above). Both Frisch (1736) and Rösel (1749) discussed and figured the *Aphodius* with red elytra, and are concerned with German material which becomes part of the basis for interpretation of *A. fimetarius*. Linnaeus's own *Fauna Svecica* (1746) explicitly refers to the Swedish Realm, which at that time included parts of northern Germany. This is important as while only *A. pedellus* is known in present day Sweden, both *A. pedellus* and *A. fimetarius* sensu Wilson occur in Germany, and Linnaeus gave Europe, not Sweden, as the type locality for his *Scarabaeus fimetarius*. Wilson (2001), in her account of the Linnaean series, mentions, as well as the specimen designated lectotype, four Linnaean specimens, two males and two females, as well as one non-Linnaean English specimen. Wilson identified one Linnaean male and one female as *A. fimetarius* (Linnaeus) in the sense adopted in her paper, and one male and one female as *A. pedellus* (De Geer). Further study of the material shows this to be not entirely correct. All the specimens were coated with a fine partly greasy layer and this gave their surface sculpture a muted appearance. Angus has now cleaned the material and as a result of this it is clear that both of the females, as well as one male, are *A. pedellus* (De Geer). The remaining male, which has the Linnean Society's catalogue number 3385 and is the male on the finer pin, at one time pinned immediately to the right of Linnaeus's name label, may be *A. fimetarius* (Linnaeus) as interpreted by Wilson (2001), as the head has the cheeks not expanded laterally in front of the eyes, their lateral margins being parallel to one another posteriorly. However, the pin of this specimen is not a typical Linnaean pin (Mikkola, 1983) which allows for the possibility that it is not an original Linnaean specimen. Dissection of the aedeagus might clarify the identification of this specimen but is considered unnecessary as the specimen is not adequate for designation as neotype. Despite the existing paralectotypes very probably lacking a specimen of *A. fimetarius* sensu Wilson, it is possible that Frisch's or Rösel's material referred partly to this species. Both Frisch's and Rösel's collections are probably lost (see Horn et al., 1990). The least disruptive choice of neotype is a specimen corresponding to Wilson's (2001) interpretation of *A. fimetarius*, followed by those who have recognised that two species are involved (see para. 5) and that is the procedure adopted here.

7. Neotype designation. Neotype ♂ *Scarabaeus fimetarius* Linnaeus 1758. The specimen is mounted on Bristol board using gum tragacanth, though for added



Fig. 1. *Scarabaeus fimetarius* Linnaeus, 1758. Proposed neotype.

strength the aedeagus is glued to the face of the card with 'Hercules' water-soluble glue. It is labelled 'England, E. Kent. Deal. 10.v.2000. Wilson, Angus & Carr.' and 'Chromosome prep. 1: 10.v.2000.' It is housed in the Coleoptera collection of

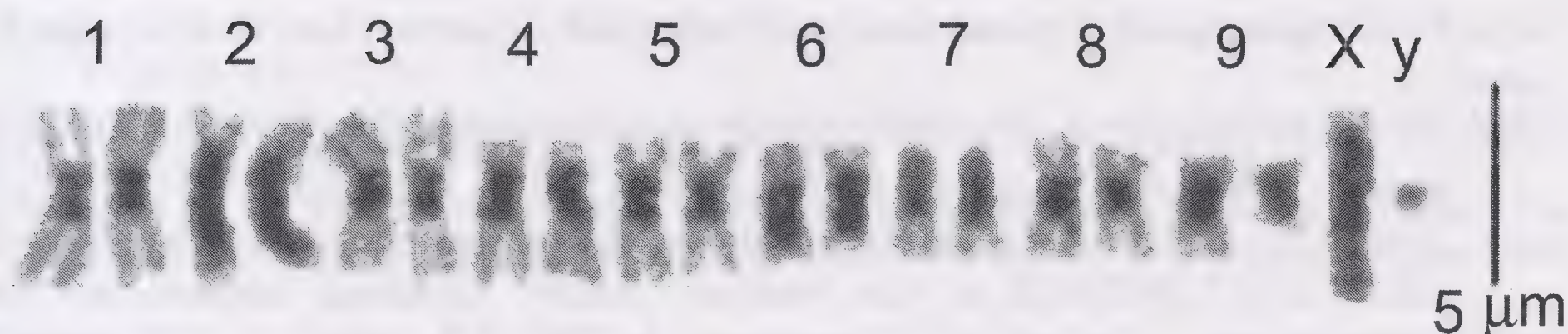


Fig. 2. *Scarabaeus fimetarius* Linnaeus, 1758. Mitotic chromosomes from mid-gut cell of proposed neotype, arranged as a karyotype.

the Natural History Museum, London and has the unique identification label BMNH{E}UIN990028. It is illustrated in Fig. 1 and a C-banded karyotype prepared from mitotic chromosomes from mid gut of this specimen is shown in Fig. 2.

Its length is 7.0 mm, its breadth 3.4 mm. The head is shining black with the frontoclypeal suture strongly trituberculate. The cheeks do not protrude laterally in front of the eyes and their lateral margins are not divergent from the base, so that they are more or less parallel to one another on each side of the head. The antennae are reddish brown. The pronotum is shining black, with yellowish red patches at anterior angles. The anterior margin has a distinct median impression and the posterior margin is entirely bordered. The hind angles are obliquely truncate. The pronotal puncturation is double, with sparse, even, fine punctures over the entire surface, but the coarser punctures are more restricted, diffuse over most of the surface but absent from an area behind the anterolateral pale patches and very sparse over the median part of the anterior quarter. The scutellum is small, triangular, black, sparsely punctuate except for the impunctate apical third. The elytra are yellowish red with the interstices weakly but distinctly convex. Interstice 4 (between striae 3 and 4) on the left elytron is about as long as interstice 3, but on the right elytron it is distinctly shorter than interstice 3. On both elytra it is as long as interstice 5 and extends to the reticulate apical section of the elytra (the subapical field) which extends between the apices of striae and interstices 1 – 6 and the apical margin of the elytra. The subapical field is flat, matt, with even, fine reticulation and scattered fine punctures, without any wrinkles. The legs are blackish brown, with the tarsi paler, reddish brown. The aedeagus in lateral view has the apices of the parameres deflexed at almost a right angle.

A C-banded karyotype from mitotic chromosomes of a mid gut cell of this beetle is shown as Fig. 3 by Wilson (2001) and as Fig. 48.2 by Angus (2006).

Designation of this neotype conforms to the interpretation of *Scarabaeus fimetarius* Linnaeus used by Wilson (2001) and those authors who have considered *Aphodius fimetarius* and *A. pedellus* (De Geer) to be separate species.

8. Strict application of the Code without asking the Commission to apply its plenary power would mean transferring the name *Aphodius foetens* from one fairly well known species to one of the most common Holarctic dung beetle species, which would cause immense confusion. Choosing a neotype from the paralectotypes of *Aphodius fimetarius* would acknowledge the species identity of probably most of the specimens that Linnaeus had in hand when describing *S. fimetarius*, but would go against the use by those authors who have recognised that the former *A. fimetarius* comprises two species (see para. 5 above).

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *finetarius* Linnaeus, 1758, as published in the binomen *Scarabaeus finetarius*, and to designate the specimen with the unique identification label BMNH{E}UIN990028 at the Natural History Museum, London, as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *finetarius* Linnaeus, 1758, as published in the binomen *Scarabaeus finetarius*, and as defined by the neotype designated in (1) above.

Acknowledgements

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References

- Angus, R.B. 2006. Chromosome differences. Pp. 346–351 in Cooter, J. & Barclay, M.V.L. (Eds.), *A Coleopterist's Handbook*, 4th edition. 439 pp. Amateur Entomologists' Society, Orpington, Kent.
- Balthasar, V. 1964. *Monographie der Scarabaeidae und Aphodiidae der palaearktischen und orientalischen Region*. 3, *Aphodiidae*. 562 pp. Tschechoslowakische Akademie der Wissenschaften, Prag.
- Baraud, J. 1992. *Coléoptères Scarabaeoidea d'Europe. Faune de France*, 78. 856 pp, 11 pls. Fédération Française des Sociétés de Sciences Naturelles, Paris.
- Britton, E.B. 1956. Coleoptera Scarabaeoidea. *Handbooks for the Identification of British Insects*, 5(11). 29 pp. Royal Entomological Society, London.
- Darby, M. 2009. *Wiltshire beetles. History, status, distribution and use in site assessment*. viii, 345 pp. Malthouse Books, Sutton Mandeville, Salisbury.
- De Geer, C. 1774. *Mémoires pour servir à l'Histoire des Insectes* 4. 456 pp. Stockholm.
- Dellacasa, G. & Dellacasa, M. 2006. Coleoptera Aphodiidae, Aphodiinae. *Fauna d'Italia*, 41. 484 pp. Calderini, Bologna.
- Dellacasa, M. & Dellacasa, G. 2006. Tribe Aphodiini Leach, 1815. Pp. 105–143 in Löbl, I. & Smetana, A. (Eds.), *Catalogue of Palearctic Coleoptera, Volume 3*. Apollo Books, Stenstrup.
- Denton, J. 2005. *The beetles of Surrey. A checklist*. 115 pp. Surrey Wildlife Trust, Woking, Surrey.
- Fabricius, J.C. 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi & Lipsiae.
- Fabricius, J.C. 1787. *Mantissa Insectorum: sistens eorum species nuper detectas: adiectis characteribus genericis, differentiis, specificis emendationibus, observationibus*. 348 pp. Christ. Gottl. Proft, Hafniae.

- Forshage, M.** 2010. Flera skalbagskataloger, plus perspective på katalogisering. *Entomologisk Tidskrift*, **131**: 67–70.
- Fowler, W.W.** 1890. *The Coleoptera of the British Islands*, vol. 4. 411 pp., pls. 99–142. Reeve & Co., London.
- Frisch, J.L.** 1736. *Beschreibung von allerley Insecten in Teutschland. 4, Samt einer Nachricht in der Vorrede von Hr Albin Buch, so von der gleichen Materien in Engelland herausgekommen*. Nicolai, Berlin.
- Gordon, R.D. & Skelley, P.E.** 2007. A monograph of the Aphodiini inhabiting the United States and Canada (Coleoptera: Scarabaeidae: Aphodiinae). *Memoirs of the American Entomological Institute*, **79**: 1–580.
- Hellwig, J.C.L.** 1798. [without title; book preview]. *Intelligenzblatt der Allgemeinen Literatur-Zeitung*, **1798** (13): 100–101.
- Herbst, J.F.W.** 1783. Kritisches Verzeichniss meiner Insektensammlung. *Archiv der Insectengeschichte*, **4**: 1–72.
- Herbst, J.F.W.** 1789. *Natursystem aller bekannten in- und ausländischen Insekten als eine Fortsetzung der Büffonischen Naturgeschichte*. Pp. 1–16, 1–64, 1–330. Pauli, Berlin.
- Jessop, L.** 1986. Dung beetles and chafers Coleoptera: Scarabaeoidea. In: *Handbooks for the Identification of British Insects*, **5**(11) (New edition). 53 pp. Royal Entomological Society, London.
- Joy, N.H.** 1932. *A practical handbook of British beetles*, vol. 1. 622 pp. Witherby, London.
- Kloet, G.S. & Hincks, W.D.** 1945. *A check list of British insects*. 483 pp. Kloet & Hincks, Stockport.
- Krell, F.-T. & Fery, H.** 1992. Familienreihe Lamellicornia. Pp. 200–252 in Lohse, G. A. & Lucht, W.H. (Eds.), *Die Käfer Mitteleuropas*, vol. 13 (2 Supplementband mit Katalogteil). Goecke & Evers, Krefeld.
- Landin, B.-O.** 1956. The Linnean species of Lamellicornia described in ‘Systema Naturae’, Ed. X (1758). (Col.). *Entomologisk Tidskrift*, **77**: 1–18.
- Lane, S.A., Wright, R.J. & Forsythe, T.G.** 2002. *An atlas of Warwickshire beetles*. 217 pp. Warwickshire Biological Records Centre, Warwick.
- Latreille, P.A.** 1810. *Considérations générales sur l'ordre naturel des animaux composant les classes des crustacés, des arachnides, et des insectes*. 444 pp. Schoell, Paris.
- Linnaeus, C.** 1745. *Öländska och Gothländska resa på riksens högloflige ständers befallning förrättad åhr 1741*. 344 pp. Kiesewetter, Stockholm & Upsala.
- Linnaeus, C.** 1746. *Fauna Svecica sistens animalia sveciae regni: quadrupedia, aves, amphibian, pisces, insecta, vermes, distributa per classes & ordines, genera & species*. Pp. 1–28, 1–411, 1 pl. Wishoff, Lugduni Batavorum.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Ljungberg, H.** 2006. Inventering av dyngbaggar på Gotland, en metodstudie. *Rapporter om Natur och Miljö, Länsstyrelsen i Gotlands Län*, **2006**(5): 1–44.
- Ljungberg, H. & Hall, K.** 2009. Nyckel till svenska dyngbaggar. *Länsstyrelsen i Gotlands Län*, **2009**: 1–33.
- Ljungberg, H. & Vessby, K.** 2009. *Information om hotade arter. Dyngbaggar*. Länsstyrelserna, Kalmar. 4 pp.
- Machatschke, J.W.** 1969. Familie: Scarabaeidae, Blatthornkäfer. Pp 266–366 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas*, vol. 8. 388 pp. Goecke & Evers, Krefeld.
- Mann, D.J.** 2006. Scarabaeoidea. Pp. 47–58 in Cooter, J. & Barclay, M.V.L. (Eds.), *A Coleopterist's Handbook, 4th edition*. 439 pp. Amateur Entomologists' Society, Orpington, Kent.
- Mann, D.J.** 2008. Family Scarabaeidae Latreille, 1802. Pp. 55–58 in: *Checklist of beetles of the British Isles*. 164 pp. A.G. Duff, Wells, Somerset, U.K.
- Mikkola, K.** 1983. Diagnostic insect pins: some problems of the Linnean insect collection solved. *Antenna*, **7**: 16–17.
- Nilsson, P.** 2009. Dyngbaggar i Blekinge – inventering av dyngbaggefaunan in Blekinge 2007. *Rapporter Länsstyrelsen Blekinge Län*, **2009**(10): 1–68.

- Ødegaard, F., Hanssen, O. & Sverdrup-Thugeson, A. 2011. Dyremøkk – et hotspot-habitat. Sluttrapport under ARKO-prosjektets periode II. *NINA Rapport*, **715**: 1–42.
- Paulian, R. 1959. *Coléoptères Scarabéides. Faune de France*, vol. 63. 298 pp. Lechevalier, Paris.
- Rössner, E. 2006. Neuheiten für die Fauna der Blatthornkäfer Deutschlands (Coleoptera, Scarabaeoidea). *Entomologische Nachrichten und Berichte*, **50**: 209–211
- Rösel, A.J. 1749. *Der monatlich-herausgegebenen Insecten-Belustigung zweyter Theil, welcher acht Classen verschiedener sowohl inländischer / als auch einiger ausländischer Insecte enthält*. Pp. [1–7], 1–24, 1–72, 1–28, 1–16, [1–3], 1–32, [1–7], 1–70, 1–200, 1–64, 1–52, [1–19], Tab. [1], A–B, I–IX, I–III, I–VI, I–IV, I–XVII, I–XXX, I–XV, I–X. Fleischmann, Nürnberg.
- Roslin, T. & Heliovaara, K. 2009. *Suomen lantakuoriaiset. Opas santiaisista*. 244 pp. Gaudeamus Helsinki University Press, Helsinki.
- Schoenherr, C.J. 1806. *Synonymia Insectorum, oder, Versuch einer Synonymie: aller bisher bekannten Insecten; nach Fabricii Systema Eleutheratorum geordnet. Erster Band, Eleutherata, oder Käfer*. Nordström, Stockholm.
- Stenström, A. & Holmberg, T. 2010. Miljöövervakning av dyngbaggar i västra Götalands län. *Länstyrelsen i Västra Götalands län, Naturvårdsenheten, Rapport*, **2010(63)**: 1–20.
- Stephens, J.F. 1839. *A manual of British Coleoptera, or beetles*. 443 pp. Longman, London.
- Thomson, C.G. 1863. *Skandnaviens Coleoptera*. 5. 340 pp. Lundberg'ska Boktryckeriet, Lund.
- Uddman, I. 1753. *Novae insectorum species*. [6], 48 pp. Merckell, Aboae.
- Whitehead, P.F. 2005. Notable Coleoptera records 5. *Entomologist's Gazette*, **56**: 251–260.
- Whitehead, P.F. 2006. *Aphodius* (A.) *fimetarius* (L., 1758) and *Aphodius* (A.) *pedellus* (De Geer, 1774) (Col., Aphodiidae) are distinct species, with new evidence for their European distribution. *Entomologist's Monthly Magazine*, **142**: 85–86.
- Wilson, C.J. 2001. *Aphodius pedellus* (De Geer), a species distinct from *A. fimetarius* (Linnaeus) (Coleoptera: Aphodiidae). *Tijdschrift voor Entomologie*, **144**: 137–143.
- Wilson, C.J. & Angus, R.B. 2004. Chromosomal analysis of the West European species of *Aphodius* Illiger, subgenus *Aphodius* s. str. (Coleoptera: Aphodiidae). *Tijdschrift voor Entomologie*, **147**: 247–264.

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Case 3576***Oscinella* Becker, 1909 (Insecta, Diptera, CHLOROPIDAE): proposed conservation by reversal of precedence with *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907**

Michael von Tschirnhaus

Faculty of Biology, University of Bielefeld, P.O. Box 100131, 33501 Bielefeld, Germany (e-mail: m.tschirnhaus@uni-bielefeld.de)

Emilia P. Nartshuk

Zoological Institute, Russian Academy of Sciences, St. Petersburg 199034, Universitetskaya 1, Russian Federation (e-mail: chlorops@zin.ru)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used generic name *Oscinella* Becker, 1909 (CHLOROPIDAE). The name *Oscinella* is threatened by its senior subjective synonyms *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907. Strict application of the Code would result in the name *Oscinella frit* (Linnaeus, 1758), uniformly used for ‘frit fly’, one of the most serious pests of cereals in the Palaearctic, having to change its generic epithet. It is proposed that *Oscinella* be given precedence over *Melanochaeta* and its objective synonym *Pachychaetina* over *Oscinella* Becker, 1909 whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Insecta; Diptera; CHLOROPIDAE; *Oscinella*; *Melanochaeta*; *Pachychaeta*; *Pachychoeta*; *Pachychaetina*; *Lasiochaeta*; *Oscinella frit*; *Melanochaeta capreolus*; Holarctic; Oriental; Afrotropical; Neotropical; Australasian; Palaearctic; frit fly.

1. Most agricultural handbooks on cereals deal with damage to cereals caused by the larvae of the ‘frit fly’. It was first documented more than two thousand years ago. The damaged young caryopses (grain) of cereals, mainly barley and oats, were called ‘frit’ by the ancient Romans, although they were unaware that a dipterous larva was the cause: Varro (37 B.C., [exact dating discussed in Flad, 1996], capitulum xlvii) wrote: ‘Illut [sic! correct illud] autem summa in spica jam matura, quod est minus quam granum, vocatur frit’ [The part at the top of the full-grown ear, smaller than the grain, is called frit]. Linnaeus adopted this name when he first described the biology of ‘Korn-Flugan’ (Linnaeus, 1750, 1754) and later named it *Musca frit* in his *Systema Naturae* (Linnaeus, 1758, p. 598). Frit fly larvae destroy growing kernels of cereals predominantly at the top of the ear and kill the central shoots of young grasses, resulting in a plant with several stems, and damage to the ear. The result can be a total loss of the crop. An immense scientific and applied literature exists concerning this common agricultural pest of grain crops (including maize) and its management. Since the earliest times agricultural handbooks have dealt with this subject. In the CHLOROPIDAE database of the first author, 3,013 articles are included

with the key word 'frit'; 41 of these titles are unpublished dissertations up to a length of 232 pages (England 13, Germany 12; Russia 11, Czech Republic 1, Finland 1, Sweden 1, Switzerland 1, U.S.A. 1) and 1,045 articles contain in their title the word 'frit', or if not, the vernacular word-stems 'bzun'... (Czech), 'шведск'... (= 'shvedsk'..., 'švedsk'...) [Russian, Bulgarian, Serbo-Croatian], swedsk..., szwedsk..., ploniar... (Polish), or the complete words 'oscinie' (French), 'suedeze' (Romanian) or oat fly. During the last 50 years in three taxonomic articles 2, 1, and 2 new species of *Oscinella* were described, correspondingly (Cherian, 1977; Beschovski, 1978; Deeming, 2003). All these are still valid. The latest key for 15 out of 22 European *Oscinella* species was published by Beschovski (1985, p. 103). The three most recent applied articles on *O. frit* in the English language were published by El-Wakeil et al. (2009), Anonymous (2002) and Lindblad (2001). *O. frit* occurs in all six biogeographical regions (CHLOROPIDAE chapters in the Catalogues of Palaearctic, Nearctic, Neotropic, Afrotropical, Oriental and Australasian Regions, CABI, 2005). CABI (2005) published the newest world distribution map of this pest fly. Presumably it is the most abundant true fly (Brachycera s.l.) in temperate Europe (experience of 45 years Brachycera sorting of sweep net, trap and eclector samples by the first author; Johnson & Taylor, 1962; von Tschirnhaus, 1981). *Oscinella pusilla* (Meigen, 1830) auctt., *O. vastator* (Curtis, 1845) and *O. nartshukiana* Beschovski, 1978 are also *Oscinella* species known to be harmful to cereals. Worldwide the genus *Oscinella* comprises 3 subgenera: *Oscinella* s.s., *Paroscinella* Becker, 1913 and *Cyclocercula* Beschovski, 1978, and altogether 82 valid species, some of which may be transferred to other genera in the future. At least 284 nominal species-group taxa have been described in *Oscinella* or placed in it for a certain period.

2. Larvae and adults of *Oscinella* are very difficult to identify, to the genus level as well as to the species. As background for this application the definition of its type species *O. frit* is outlined by reference to selected literature: Drawings: the colour pattern of the fly's legs is variable and depends on the temperature regime under which the larvae developed (Le Berre, 1959; Le Berre & Chevin, 1962). Unpublished studies made by the first author in the course of a few days in the Alps demonstrate that, dependent on the altitude from 800 m up to 2,640 m a.s.l., the flies become darker and darker with increasing altitude, and the wings become shorter, wider and darker. Many other similar European species and their synonyms have been described mainly on the basis of colour differences of their legs. A thorough revision based on the male genitalia and on specimens reared from known host plants (species of POACEAE and CYPERACEAE) is still missing. Coaker (1952) was the first to study genitalia of *O. frit* in connection with the fly's external morphology. One plate (fig. 19) with figures of the male genitalia is missing in the original unpublished dissertation held at the University of London and Coaker himself does not have a copy of it (pers. comm. with the first author, 3.ii.1976). Different drawings of the male genitalia are available in Andersson (1977, p. 111), Beschovski (1985, p. 101; 1987, p. 43) and Nartshuk & von Tschirnhaus (submitted). The morphology of the larvae of *O. frit* or both these species was distinguished by Narchuk (1956), Nye (1958) and Hubicka & Buchalczyk (1962).

3. Becker proposed the generic name *Oscinella* Becker, 1909 for his new Afrotropical CHLOROPIDAE species, *O. deficiens*, currently assigned to *Conioscinella* Duda, 1929. As pointed out by Sabrosky (1973), Becker fulfilled the criteria for making the name

available. In his large monograph of Palaearctic CHLOROPIDAE Becker (1910) designated '*Oscinella frit* Linnaeus' as type species of *Oscinella*, a species not included in the original description (Becker, 1909). Thus, Sabrosky (1973) proposed the designation of *Musca frit* Linnaeus, 1758 as the type species of *Oscinella*, which was approved by the Commission in Opinion 1100 (BZN 34: 203–204, February 1978). Incidentally, a mistake occurred accompanying this designation: In the 'Original References' the correct year 1909 of Becker's proposal was combined with an erroneously cited article, namely Becker (1910, p. 29), published 15.iii.1910). We propose that the entry for the name *Oscinella* on the Official List of Generic Names in Zoology be amended to record that the correct reference for this genus is '**Becker, T. 1909. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, 15(3), p. 120**'.

4. *Musca frit* Linnaeus, 1758 since its description until its inclusion in *Oscinella* by Becker (1910) has been assigned to various genera: *Oscinis* Latreille, 1804, *Gaurax* Loew, 1863 and *Oscinisoma* Lioy, 1864 (the last is occasionally incorrectly spelled as *Oscinosoma*). Both the taxonomic and economic literature on the frit fly and its relatives followed Becker (1910), although some applied entomologists and authors of agricultural books have, for a variety of reasons, continued using the specific name *frit* in combination with the generic names *Oscinis*, *Oscinisoma* or '*Oscinosoma*'. At present the generic names *Gaurax* Loew, 1863 and *Oscinisoma* Lioy, 1864 are used as valid and are listed as such in all modern monographs on CHLOROPIDAE and the manuals on Diptera. The type species of *Oscinis* Latreille, 1804 is *Musca lineata* Fabricius, 1781, a junior primary homonym of *Musca lineata* Harris, 1776 (SYRPHIDAE). Since Becker's monograph (1910) *Oscinis* Latreille, 1804 is a junior synonym of *Chlorops* Meigen, 1803 (CHLOROPINAE), both having the same type species *Musca pumilionis* Bjerkander, 1778.

5. *Elachiptera aterrima* Strobl, 1880 (p. 34) is the type species of *Pachychoeta* Bezzi, 1895 (p. 72), by original designation. It was never doubted since its synonymisation by Collin (1911, p. 152) that *Oscinis capreolus* Haliday, 1838 (p. 187) is a senior synonym of *Elachiptera aterrima* Strobl, 1880. Morge (1974) mentioned that the male type specimen of *E. aterrima* in the Strobl Collection in Admont (Austria) was identified by John Ismay as *M. capreolus*. Later (Morge, 1984, p. 317) an exact figure of the type specimen of *M. capreolus* was published.

6. In order to clarify the status of *Melanochaeta* Bezzi, 1906 (p. 50) its nomenclatural history is outlined. Bezzi (1895) used *Pachychoeta* as a subgenus of *Crassiseta* von Roser, 1840, intentionally using a name earlier proposed by Loew (1845) as *Pachychaeta* [proposed by Loew (1845) in synonymy with *Crassiseta* Roser, 1840 but made available by Bezzi's use of it as the valid name of a taxon], but with the spelling *Pachychoeta*. As there is no indication in Bezzi (1895) of an intentional change, *Pachychoeta* cannot be an unjustified emendation. Bezzi later (1906: 50) used Loew's original spelling *Pachychaeta* [linguistically correct, from Doric Greek: chaíta = bristle]. Bezzi's (1906) first two sentences and the last one are [translated from German]: '*Melanochaeta* nov. nom. for *Pachychaeta* Bezzi 1895 (Fam. *Chloropidae*, typ. *Elachiptera aterrima* Strobl) nec Loew 1845 (Dipt.). When I founded this new subgenus of *Crassiseta* I used the name of Loew in order to prevent the creation of a new one ... in any case for my genus a new name must be used'. However, *Melanochaeta* is not a new replacement name because the name it is stated to replace is not an available name but a misidentification ('*Pachychaeta* Bezzi 1895 ... nec

Loew 1845'). *Melanochaeta* Bezzi, 1906 is to be considered as proposed with the type species (and only included species) *Elachiptera aterrima* by original designation.

7. We thoroughly studied all publications of Loew from 1840 to 1845 as to date it remained unclear if Loew (1845) had published his intended generic name *Pachychaeta* Loew, 1845 only in synonymy with *Crassiseta* or if he had published it anywhere before together with one or more nominal species. Loew's complicated German text can be interpreted under both alternatives. Later authors between 1845 and 1961 did not associate any species name with *Pachychaeta* Loew. Kanmiya (1983, p. 85) cited Corti (1909) to have designated *Oscinis cornuta* Fallén as type species, but in Corti's extensive discussion of the taxonomic problems no designation is included. The first author naming *O. cornuta* as the type species was Andersson (1977). His designation was accepted by Nartshuk (1984).

8. Neither version of Bezzi's name could become valid: *Pachychoeta* Bezzi, 1895 is preoccupied by *Pachychoeta* Bigot, 1857 (p. 545) (ASILIDAE) and *Pachychaeta* Bezzi, 1906 is preoccupied by *Pachychaeta* Brauer & von Bergenstamm, 1891 (p. 99 [also 1892, p. 403]) (TACHINIDAE), an unjustified emendation of *Pachycheta* Portschinsky, 1881 (p. 278). This emendation was discussed in detail by O'Hara (2009). Nevertheless the proposal of a new name is justified, though the circumstances for its validation are outlined only in this application. Bezzi (1906) proposed his new genus *Melanochaeta* with an indication, his description of *Pachychoeta* (1885), and by stating *Elachiptera aterrima* Strobl as its type species.

9. Unaware of the new name *Melanochaeta*, Hendel (1907) a year later proposed a second replacement name for *Pachychoeta* Bezzi, 1895 (now cited as the justified emendation *Pachychaeta*), namely *Pachychaetina* Hendel, 1907, again automatically with the type species *Elachiptera aterrima* and its senior synonym *Oscinis capreolus*.

10. *Melanochaeta* Bezzi, 1906 antedates *Oscinella* Becker, 1909. Apart from *Melanochaeta capreolus*, 39 valid species (many unrevised) are currently included in the genus *Melanochaeta*, all without economic importance. All these 39 species are currently separated from species of *Oscinella* Becker by morphological characters. An available genus-group name for this assemblage of species is *Lasiochaeta* Corti, 1909 with its type species *Elachiptera pubescens* Thalhammer, 1898 as published with morphological annotations by Nartshuk & von Tschirnhaus (submitted). The species *Melanochaeta capreolus* was also described as *Oscinella coei* Nartshuk, 1965. The synonymy of both species was established by Nartshuk (1984) with the unexpressed consequence that *Oscinella* became a junior synonym of *Melanochaeta*. The problematic synonymy was indicated for the first time by von Tschirnhaus (1992, p. 482).

11. We propose that, in the interest of nomenclatural stability, the Commission rule to conserve the widely used generic name *Oscinella* Becker, 1909 by a reversal of precedence with *Melanochaeta* Bezzi, 1906 and its objective synonym *Pachychaetina* Hendel, 1907 under Article 23.9.3 of the Code.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *Oscinella* Becker, 1909 is to be given precedence over the following generic names, whenever it and either of the other two are considered to be synonyms:
 - (a) *Melanochaeta* Bezzi, 1906;
 - (b) *Pachychaetina* Hendel, 1907;

- (2) to place on the Official List of Generic Names in Zoology the following names:
- (a) *Melanochaeta* Bezzi, 1906, with the endorsement that it is not to be given priority over *Oscinella* Becker, 1909 whenever they are considered to be synonyms, as ruled in (1)(a) above;
 - (b) *Pachychaetina* Hendel, 1907, with the endorsement that it is not to be given priority over *Oscinella* Becker, 1909 whenever they are considered to be synonyms, as ruled in (1)(b) above;
- (3) to amend the entry on the Official List of Generic Names in Zoology for the name *Oscinella* Becker, 1909 to record that the correct reference for this name is **Becker, T.** 1909. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, **15**(3), p. 120, and to add the endorsement that is to be given precedence over *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907 whenever it and either of the other two are considered to be synonyms as ruled in (1) above.

References

- Andersson, H. 1977. Taxonomic and phylogenetic studies on Chloropidae (Diptera) with special reference to Old World genera. *Entomologica Scandinavica Supplementum*, **8**: 1–200.
- Anonymous. 2002. *Oscinella frit*. *Bulletin OEPP (Organisation Européenne et Méditerranéenne pour la Protection des Plantes)*, **32**(2): 355–360.
- Becker, T. 1909. Collections recueillies par M. Maurice de Rothschild dans l'Afrique orientale anglaise. Insectes: Diptères nouveaux. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, **15**(3): 113–121.
- Becker, T. 1910. Chloropidae. Eine monographische Studie. I. Teil. Paläarktische Region. *Archivum Zoologicum* (Budapest), **1**(10): 33–174, pls. II–III.
- Beschovski, V. 1978. Subdivision of the Genus *Oscinella* Becker, 1909 (Diptera, Chloropidae) with description of a new species. *Acta Zoologica Bulgarica*, **10**: 21–29.
- Beschovski, V.L. 1985. Diptera, Chloropidae. *Fauna Bulgarica*, **14**: 1–219.
- Beschovski, V.L. 1987. Description of *Sabroskyina* genus novum (Diptera, Chloropidae) and taxonomic remarks on the species included. *Acta Zoologica Bulgarica*, **34**: 36–44.
- Bezzi, M. 1895. Contribuzioni alla fauna ditterologica italiana. I. - Ditteri della Calabria. *Buletino della Società entomologica italiana*, **27**: 39–78.
- Bezzi, M. 1906. Noch einige neue Namen für Dipterengattungen. *Zeitschrift für systematische Hymenopterologie und Dipterologie*, **6**(1): 49–55.
- Bigot, J. 1857. Dipteros. Orden de los dipteros. DIPTERA, Aristote, Linn., Latr., Meigen, Tall, Wiedemann, Macquart. ANTLIATA Fabricius. Pp. 328–349, 354, 20 pls. in de la Sagra, D.R. (Ed.), *História Física Política y Natural de la Isla de Cuba*, **32**(1856), Segunda parte. História natural, Tomo VII. Crustaceos, aragnides é insectos. 3, xxxii, 371 pp., pls. i–xx [the 20 pls. are bound in vol. viii]. Arthus Bertrand, Paris.
- Brauer, F. & von Bergenstamm, J.F. 1891. Die Zweiflügler des kaiserlichen Museums zu Wien. V. Vorarbeiten zu einer Monographie der Muscaria schizometopa (excl. Anthomyidae). Pars II. 142 pp. Wien. [Also published 1892. *Denkschriften der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe*, **58**(1891): 305–446].
- CAB International. 2005. *Oscinella frit*. *Distribution maps of plant pests*, **668**.
- Cherian, P.T. 1977. Descriptions of three new and records of two known species of Chloropidae (Diptera) from India. *Records of the Zoological Survey of India*, **73**(1–4): 179–187.
- Collin, J.E. 1911. Additions and corrections to the British list of *Muscidae Acalyptratae*. (Continued from vol. xlvi, page 178). *Entomologist's Monthly Magazine*, **47**: 145–153, 182–187, 229–234, 253–256.

- Deeming, J.** 2003. A contribution to the knowledge of African species of *Oscinella* Becker (Diptera: Chloropidae). *Cimbebasia*, **19**: 81–94.
- El-Wakeil, N.E., Sallam, A.A. & Volkmar, C.** 2009. Ecological studies on frit fly *Oscinella frit* (L.) and its control in summer wheat in Central Germany. *Mitteilungen der Deutschen Gesellschaft für Allgemeine und Angewandte Entomologie*, **17**: 215–220.
- Flad, D.** 1996. Marcus Terentius Varro: Gespräche über die Landwirtschaft. Buch 1, herausgegeben, übersetzt und erläutert von Dieter Flad. *Texte zur Forschung*, **65**: xii, 382 pp. Wissenschaftliche Buchgesellschaft, Darmstadt.
- Haliday, A.H.** 1838. New British Insects indicated in Mr. Curtis's Guide [part]. *Annals of Natural History*, **2**(8 & 9): 112–121, 183–190.
- Hendel, F.** 1907. Nomina nova für mehrere Gattungen der acalyptraten Musciden. *Wiener Entomologische Zeitung*, **26**: 98.
- Hubicka, J. & Buchalczyk, A.** 1962. Badania porównawcze nad morfologią; *Oscinella pusilla* Meig. i *Oscinella frit* (L.) okolic Lublina. *Annales Universitatis Mariae Curie-Skłodowska*, (C)**17**(3): 109–163, tab. 1 [Comparative investigations on the morphology of *Oscinella pusilla* Meig. i *Oscinella frit* (L.) in the environs of Lublin].
- ICZN** 1978. Opinion 1100. Designation of *Musca frit* Linnaeus, 1758, as type-species of *Oscinella* Becker, 1909 (Diptera, Chloropidae). *Bulletin of Zoological Nomenclature*, **34**(4): 203–204.
- Johnson, C.G., Taylor, L.R. & Southwood, T.R.E.** 1962. High altitude migration of *Oscinella frit* L. (Diptera: Chloropidae). *Journal of Animal Ecology*, **31**(2): 373–384.
- Kanmiya, K.** 1983. A systematic study of the Japanese Chloropidae (Diptera). *Memoirs of the Entomological Society of Washington*, **11**: 1–370.
- Le Berre, J.R.** 1959. Études entreprises sur les Oscinies, dans le cadre des recherches relatives aux immunités végétales a l'égard des insectes. *Mededelingen van de Landbouw-Hogeschool en de Opzoekingsstations van de Staat te Gent*, **24**: 593–610.
- Le Berre, J.R. & Chevin, H.** 1962. Comportement de diverses Graminées a l'égard de l'Oscinie et variations morphologiques de celle-ci en fonction du substratum alimentaire. *Annales des Épiphyties*, **12**(4)(1961): 433–444.
- Lindblad, M.** 2001. Development and evaluation of a logistic risk model: Predicting frit fly infestation in oats. *Ecological Applications*, **11**: 1563–1572.
- Linnaeus, C.** 1750. Rön Om Slö-korn. *Kongliga Svenska Vetenskaps Academiens Handlingar*, **11**(= 5(2)): 179–185. [Observations on poorly developed kernels. (German translation see following title)].
- Linnaeus, C.** 1754. Untersuchung der tauben Gerste. *Der Königlich Schwedischen Akademie der Wissenschaften Abhandlungen aus der Naturlehre, Haushaltungskunst und Mechanik*, **12**(1750): 185–190.
- Linnaeus, C.** 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Loew, H.** 1845. Dipterologische Beiträge. [Einladung] zu der öffentlichen Prüfung der Schüler des Königlich Friedrich-Wilhelms-Gymnasiums zu Posen, **17. März 1845**: i, 52 pp., 1 pl. Königliche Hofdruckerei W. Decker, Posen.
- Morge, G.** 1974. Diptera Collectionis P. Gabriel Strobl VI (Supplementa ad Partes I-V) *Beiträge zur Entomologie*, **24**: 383–416.
- Morge, G.** 1984. Beiträge zur Kenntnis von Typen-Exemplaren und wenig bekannten Dipteren-Arten - V. *Beiträge zur Entomologie*, **34**(2): 297–317.
- Narchuk, E.P.** 1956. Vidy roda *Oscinella* Beck. (Diptera, Chloropidae) evropeiskoj chasti SSSR i ikh kormovye rasteniya. *Entomologicheskoe Obozrenie*, **35**(4): 856–882 [*Oscinella*-species (Diptera, Chloropidae) of the European part of the USSR and their host plants. (Contains a key in German)].
- Nartshuk, E.P.** 1965. A new species of *Oscinella* Becker from Yugoslavia (Dipt., Chloropidae). *Entomologist's Monthly Magazine*, **101**: 18–19.
- Nartshuk, E.P.** 1984. Family Chloropidae. Pp. 222–298 in Soós, Á. & Papp, L. (Eds.), *Catalogue of palaearctic Diptera. Volume 10, Clusiidae – Chloropidae*. 402 pp.; Elsevier Amsterdam & Akadémiai Kiadó, Budapest.
- Nartshuk, E.P. & von Tschirnhaus, M.** [submitted]. New generic synonyms in Chloropidae (Diptera, Acalyptratae). *Zootaxa*.

- Nye, I.W.B. 1958. The external morphology of some of the dipterous larvae living in the Gramineae of Britain. *Transactions of the Royal Entomological Society of London*, **110**(15): 411–487.
- O'Hara, J.E. 2009. Resurrection of the name *Pachycheta* Portschinsky for a genus of Tachinidae (Diptera). *Zootaxa*, **1989**: 66–68.
- Sabrosky, C.W. 1973. *Oscinella* Becker, 1909: proposed designation of type-species, under the plenary powers (Diptera, Chloropidae). Z.N.(S.) 2037. *Bulletin of Zoological Nomenclature*, **30**(2): 121–123.
- Strobl, P.G. 1880. Dipterologische Funde um Seitenstetten. Ein Beitrag zur Fauna Nieder-Österreichs. *Programm des Kaiserlich-Königlichen Ober-Gymnasiums der Benedictiner zu Seitenstetten* (Linz), **14**: 3–65.
- Varro, M.T. 37 B.C. De re rustica. [= Res rusticae]. Liber I: capitula I-LXIX. - Electronic transcription 2007: The Latin Library. IntraText Edition CT by Èulogos, Roma: <http://patriot.net/~illard/cp/latlib>.
- von Tschirnhaus, M. 1981. Die Halm- und Minierfliegen im Grenzbereich Land-Meer der Nordsee. Eine ökologische Studie mit Beschreibung von zwei neuen Arten und neuen Fang- und Konservierungsmethoden (Diptera: Chloropidae et Agromyzidae). *Spixiana Supplement*, **6**: 1–405, pls. 1–11.
- von Tschirnhaus, M. 1992. Minier- und Halmfliegen (Agromyzidae, Chloropidae) und 52 weitere Familien (Diptera) aus Malaise-Fallen in Kiesgruben und einem Vorstadtgarten in Köln. *Decheniana Beihefte*, **31**: 445–497, pls. 13–15.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3561

***Anchisaurus* Marsh, 1885 (Dinosauria, Sauropodomorpha): proposed conservation of usage by designation of a neotype for its type species *Megadactylus polyzelus* Hitchcock, 1865**

Peter M. Galton

College of Naturopathic Medicine, University of Bridgeport, Bridgeport, CT U.S.A.; Peabody Museum of Natural History, Yale University, New Haven, CT U.S.A. (e-mail: pgalton@bridgeport.edu)

Abstract. The purpose of this application, under Article 75.5 of the Code, is to conserve the usage of the name *Anchisaurus* Marsh, 1885 (Lower Jurassic, Connecticut Valley, northeastern U.S.A.) that is based on *Megadactylus polyzelus* Hitchcock, 1865. It is proposed to replace the fragmentary and non-diagnostic holotype of *M. polyzelus* with a diagnostic neotype, an almost complete skull and skeleton (YPM 1883, holotype of *A. colurus* Marsh, 1891). This specimen has formed the basis for the concept of *Anchisaurus*, the first basal sauropodomorph genus from the U.S.A. and still the best represented from there since it was illustrated by Marsh (1892, 1893), and of *A. polyzelus* since it was illustrated by Galton (1976). *Anchisaurus* is the basis for ANCHISAURIDAE Marsh, 1885, the first basal sauropodomorph family to be named, and for the Anchisauria Galton & Upchurch, 2004.

Keywords. Nomenclature; taxonomy; Dinosauria; Sauropodomorpha; *Anchisaurus*; *Ammosaurus*; *Megadactylus*; *M. polyzelus*; Lower Jurassic; northeastern U.S.A.

1. The few articulated skeletal remains of dinosaurs discovered in the 1800s in the Lower Jurassic of North America were found in the Connecticut Valley, northeastern U.S.A., and most represent what are now regarded as basal sauropodomorph dinosaurs (specimens described by Galton, 1976; see citations therein for figures in Marsh, 1889, 1892, 1893, 1896; Lull, 1915, 1953; Huene, 1906, 1908, 1914a, 1932; see also Yates, 2004; 2010; Fedak & Galton, 2007).

2. J. Wyman (in Hitchcock, 1858, p. 187) mentioned a whole collection of bones, including imperfect caudal vertebrae, parts of a thigh bone and parts of a foot from Springfield, Massachusetts, which were discovered after blasting operations. These bones were named *Megadactylus polyzelus* by Hitchcock (1865, p. 39), who figured the 'right foot' (i.e. pes) (Pl. IX, fig. 6). The species was re-described by Cope (1870, p. 122A-E, pl. XIII; as *Megadactylus*, p. 122A; first use of *M. polydactylus*, p. 122E), based on this and other parts of the holotype (ACM 41/109). He first recognized it as a dinosaur and described the pes as a 'right anterior foot', i.e. manus (Cope, 1870, p. 122B). The holotype consists of 10 incomplete vertebrae (dorsals, sacral 1 and 2, caudals), three incomplete ribs, the proximal left scapula, the distal left radius, ulna, and manus (right manus reidentified as left by Galton & Fedak, 2007, p. 248), the cojoined distal ischia, the left femur (length ~178 mm), fibula, proximal tibia and the complete metatarsal IV, the proximal right metatarsal II, and the pedal phalanx 1 of

digit III (figured by Marsh, 1892, 1896; Huene, 1914a; Lull, 1915, 1953; Galton, 1976).

3. Marsh (1877, p. 344; not 1882, p. 84 as always cited) cited this genus as *Amphisaurus* (*Megadactylus*) with no explanation of the reason for the new synonym *Amphisaurus*. In fact *Megadactylus* Hitchcock, 1865 was already preoccupied by *Megadactylus* Fitzinger, 1843 (Lacertilia), a fact not mentioned by Marsh (1877, 1882). Finally Marsh (1885, p. 169) replaced *Amphisaurus* Marsh, 1877 (preoccupied by *Amphisaurus* Barkas, 1870, in Reptilia) with *Anchisaurus* Marsh, 1885.

4. Marsh (1889, 1891, 1892) described three additional species of *Anchisaurus* based on three articulated skeletons from Manchester, Connecticut. *A. major* Marsh, 1889 (type species of *Ammosaurus* Marsh, 1891; family AMMOSAURIDAE Huene, 1914b) was based on the largest individual (YPM 208, femur ~285 mm, figured by Marsh, 1892, 1896; Lull, 1915, 1953; Huene, 1906, 1908, 1914a; Galton, 1971, 1976). The medium-sized, nearly complete skeleton (YPM 1883, Fig. 1, femur ~211 mm) has an almost complete skull and was named *Anchisaurus colurus* Marsh, 1891 (figured by Marsh, 1892, 1893, 1896; Huene, 1906, 1908, 1914a, 1932; Galton, 1976; Fedak & Galton, 2007; Yates, 2004, 2010). *Anchisaurus colurus* Marsh, 1891 is the type species of *Yaleosaurus* Huene, 1932. YPM 1883 was the basis for the skeletal reconstruction of *Anchisaurus colurus* by Marsh (1893, 1895, 1896), which has been reproduced many times since, also for that by Huene (1932) for *Yaleosaurus colurus*, and for more recent reconstructions of *Anchisaurus polyzelus* (Galton, 1971, 1973, 1976; Galton & Cluver, 1976; Paul, 2010; Yates, 2010). YPM 1883 was the basis for the skull reconstructions of *Anchisaurus colurus* by Marsh (1893, 1896; also Lull, 1915, 1953), and for more recent cranial reconstructions of *A. polyzelus* (Galton, 1976, 1990; Galton & Upchurch, 2004; Yates, 2010). The bones of the smallest skeleton (YPM 209, femur ~110 mm) were described as *A. solus* Marsh, 1892. It is almost complete, but the bones are poorly preserved and it represents a juvenile individual (figured by Huene, 1906, 1914a; Galton, 1971, 1976; Fedak & Galton, 2007).

5. Huene (1914a, p. 75) referred to ACM 41/109 as *Thecodontosaurus polyzelus* (Hitchcock, 1865), placing it in a genus known from the Upper Triassic of England. Lull (1915) pointed out that this left *Anchisaurus colurus* Marsh, 1891 unassigned to any genus. This situation was resolved when Huene (1932) made it the type species of his new genus *Yaleosaurus* Huene, 1932, a generic name that was used subsequently by Lull (1953) and Colbert (1970).

6. The various taxonomic assignments for the four nominal species of *Anchisaurus* were summarized by Galton (1971, 1976), who recognized two taxa of anchisaurids as basal sauropodomorphs, i.e. *Anchisaurus polyzelus* (which he considered a senior synonym of *A. colurus*) and *Ammosaurus major* (which he considered a senior synonym of *A. solus*). However, the characters used to distinguish these two genera (Galton, 1976, 1990; Galton & Upchurch, 2004; Upchurch et al., 2007) have been considered to represent ontogenetic differences, preservational differences, errors in reconstruction, and inaccurate measurements (see Sereno, 2007; Yates, 2004, 2010).

7. Sereno (1999) listed '*Ammosaurus* (= *Anchisaurus*)' but no reason was given for the synonymy.

8. Based on an apomorphy, the flattened coplanar ischial shafts, Yates (2004) synonymised *A. colurus* (also *A. major* and *A. solus*) with *A. polyzelus*. His

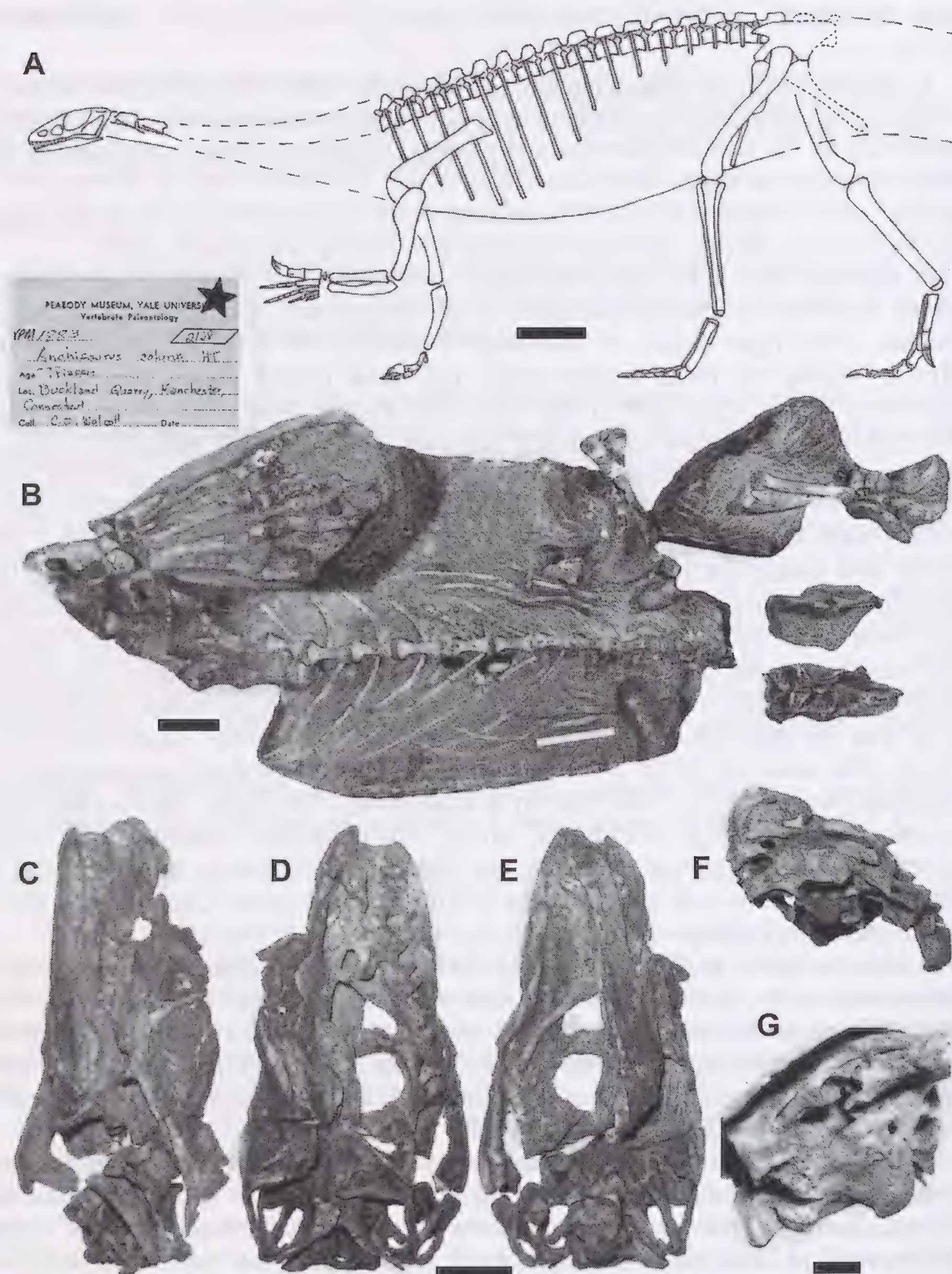


Fig. 1. YPM 1883, holotype of *Anchisaurus colurus* Marsh, 1891, proposed neotype for *Megadactylus polyzelus* Hitchcock, 1865, type species of *Anchisaurus* Marsh, 1885, from the Lower Jurassic of Manchester, Connecticut, U.S.A.: (A) skeletal reconstruction in left lateral view; (B) specimen as preserved; (C–G) slightly crushed skull as preserved: (C–F) in approximate views: (C) left lateral; (D) dorsal; (E) ventral and (F) occipital; (G) detail of braincase in left lateral and slightly ventral view. For stereo photographs and labeled outline drawings comparable to B, D and E (with skull prior to further preparation), see Galton (1976, figs. 11, 12A, B); for labeled outline drawings comparable to C, F and G, see Galton & Fedak (2007, figs. 1B, 3A, C); A and B modified from originals used in Galton (1976); museum label from M. Fox (YPM). Scale bars represent (A) 100 mm, (B) 50 mm, (C–F) 20 mm and (G) 10 mm.

synonymization of *Ammosaurus major* with *Anchisaurus polyzelus* was further supported by three additional apomorphies.

9. Sereno (2007) questioned the validity of the character ‘flattened coplanar ischial shaft’ for ACM 41/109 and regarded *Anchisaurus polyzelus* as a nomen dubium. He diagnosed *Ammosaurus major* based on one vertebral and one iliac character of the holotype (YPM 208) and, because both characters are also present in YPM 1883, he regarded *Anchisaurus colurus* as a junior synonym of *Ammosaurus major*.

10. Based on two autapomorphies of *Anchisaurus polyzelus* present in the holotype (ACM 41/109), i.e. (1) a slender first sacral rib with its base occupying less than half the length of the first sacral centrum and (2) dorsoventrally flattened ischial blades set at a low angle to each other, Yates (2010) referred YPM 208 (holotype of *Anchisaurus major* Marsh, 1889) and YPM 1883 (holotype of *Anchisaurus colurus* Marsh, 1891) to *Anchisaurus polyzelus*. Three additional autapomorphies for *A. polyzelus* are present in these referred specimens, i.e. (3) posterior dorsal centra that are about twice as long as the height of the centrum face; (4) a foramen, or pit, opening ventrally on the base of the second sacral rib and (5) a long, narrow iliac preacetabular process that is at least twice as long as its basal height (Yates, 2010). Extra autapomorphies for *Anchisaurus polyzelus* are only observable in YPM 1883, i.e. (6) the transversely expanded ventral ramus of the postorbital and (7) a lateral pit on the distal part of the quadrate (Yates, 2004, 2010).

11. Autapomorphies 1 and 2 for the holotype of *Anchisaurus polyzelus* are also present in *Leoneriasaurus taquetrensis* Pol et al., 2011 (Lower Jurassic, Argentina). Character 2, which is indeterminable for YPM 1883, is also present in *Asylosaurus yalensis* Galton, 2007 (Upper Triassic, England). Consequently, *Anchisaurus polyzelus* is a nomen dubium. Characters 3–5 are then autapomorphies of *Ammosaurus major* as shown by the holotype (YPM 208) and referred specimen (YPM 1883). However, character 3 is also present in SAM-900 [Galton & Cluver, 1976, fig. 2; Lower Jurassic, South Africa; holotype of “*Gyposaurus*“ (?*Anchisaurus*) *capensis* Broom, 1911], character 4 is not present in YPM 1883, and character 5 is also present in *Leoneriasaurus taquetrensis* (Pol et al., 2011).

12. Sereno (2007) used the name *Ammosaurus major* instead of *Anchisaurus polyzelus* for YPM 208, 209 and 1883 but, as noted above, the autapomorphies for this taxon as exhibited by the holotype YPM 208 are rather tenuous and, if YPM 1883 represents a separate taxon [*Yaleosaurus colurus* (Marsh, 1891)], then it would possess characters 6 and 7. However, YPM 1883, the most complete skeleton (only lacking part of the neck and the tail; see Huene, 1906, pls. I–III, 1914a, figs. 1, 7–11; Galton, 1976, figs. 11, 12, 15–22; for skull see Galton, 1976, figs. 13, 14A–H; Fedak & Galton, 2007, figs. 1, 3, 4, 7, 8; Yates, 2004, figs. 3–8, 9D, 2010, figs. 1, 5, 6C) from the Connecticut Valley, has since 1976 formed the basis for the concept of *Anchisaurus*, the first basal sauropodomorph genus from the U.S.A. and still the best represented since its description by Marsh (1892, 1893), and also for the concept of *A. polyzelus*. *Anchisaurus* is the basis for ANCHISAURIDAE Marsh, 1885, the first basal sauropodomorph family to be named, and the Anchisauria Galton & Upchurch, 2004. In the absence of a Commission’s ruling, *Yaleosaurus* Huene, 1932, a name last used by Colbert (1970), would apply to the concept that for the last 35 years has been uniformly considered as *Anchisaurus*. A list of 75 post-1976 references demonstrating the usage of the name *Anchisaurus* is submitted to the Secretariat. In most cases

contextually the reference is to YPM 1883 and in some cases is specifically mentioned. References after 2007 usually also include *Anchisauria*. This list does not include references cited in this application.

13. Because the taxonomic identity of the nominal species of *Megadactylus polyzelus*, the type species of *Anchisaurus*, cannot be determined from its existing name-bearing type, and stability and universality are threatened thereby, the Commission is requested to use its plenary power under Article 75.5 to set aside the existing name-bearing type and to preserve current usage by designating YPM 1883 (Fig. 1) as the neotype. The specimen has been extensively illustrated in the literature (see section 12) with many of the figures as photographs (for stereo photographs see Galton, 1976, figs. 11–13, 18).

14. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *Megadactylus polyzelus* Hitchcock, 1865 and to designate specimen YPM 1883 in the Peabody Museum of Natural History of Yale University as the neotype;
- (2) to place on the Official List of Generic Names in Zoology the name *Anchisaurus* Marsh, 1885 (gender: masculine), type species by monotypy *Megadactylus polyzelus* Hitchcock, 1865;
- (3) to place on the Official List of Specific Names in Zoology the name *polyzelus* Hitchcock, 1856, as published in the binomen *Megadactylus polyzelus* and as defined by the neotype designated in (1) above, specific name of the type species of *Megadactylus* Hitchcock, 1865.

Institutional abbreviations:

ACM: Amherst College Museum, Amherst, Massachusetts, U.S.A.; SAM: South African Museum (Iziko Museums of Cape Town), Cape Town, South Africa; YPM: Peabody Museum of Natural History, Yale University, New Haven, Connecticut, U.S.A.

References

- Barkas, T.P. 1870. *Amphisaurus, Strepsodus, Ctenodus, &c. Scientific Opinion*, London, 3: 369.
- Broom, R. 1911. On the dinosaurs of the Stormberg, South Africa. *Annals of the South African Museum*, 7: 291–308.
- Colbert, E.H. 1970. Fossils of the Connecticut Valley. The age of dinosaurs begins (Revised Edition). *Bulletin of the State Geological and Natural History Survey of Connecticut*, 96: 1–32.
- Cope, E.D. 1870. Synopsis of the extinct Batrachia, Reptilia and Aves of North America. *Transactions of the American Philosophical Society*, 14: 1–252.
- Fedak, T.J. & Galton, P.M. 2007. New information on the braincase and skull of *Anchisaurus polyzelus* (Lower Jurassic, Connecticut, USA; Saurischia: Sauropodomorpha): implications for sauropodomorph systematics. *Special Papers in Palaeontology*, 77: 245–260.
- Fitzinger, L.J.F.J. 1843. *Systema Reptilium*. Vindobonæ, Vienna, 106, vi pp, Index.
- Galton, P.M. 1971. The prosauropod dinosaur *Ammosaurus*, the crocodile *Protosuchus*, and their bearing on the age of the Navajo Sandstone of northeastern Arizona. *Journal of Paleontology*, 45: 781–795.
- Galton, P.M. 1973. On the anatomy and relationships of *Efraasia diagnostica* (Huene) n. gen., a prosauropod dinosaur (Reptilia: Saurischia) from the Upper Triassic of Germany. *Paläontologische Zeitschrift*, 47: 229–255.

- Galton, P.M. 1976. Prosauropod dinosaurs (Reptilia: Saurischia) of North America. *Postilla*, **169**: 1–98.
- Galton, P.M. 1990. Basal Sauropodomorpha - Prosauropoda. Pp. 320–344 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 1st Edition*. University of California Press, Berkeley.
- Galton, P.M. 2007. Notes on the remains of archosaurian reptiles, mostly basal sauropodomorph dinosaurs, from the 1834 fissure fill (Upper Triassic) at Clifton, in Bristol, southwest England. *Revue de Paléobiologie*, **26**: 501–591.
- Galton, P.M. & Cluver, M.A. 1976. *Anchisaurus capensis* (Broom) and a revision of the Anchisauridae (Reptilia, Saurischia). *Annals of the South African Museum*, **69**: 121–159.
- Galton, P.M. & Upchurch, P. 2004. Prosauropoda. Pp. 232–258 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 2nd edition*. University of California Press, Berkeley.
- Hitchcock, E. 1858. *Ichnology of New England. A report on the sandstone of the Connecticut Valley, especially its fossil footmarks*. 220 pp. White, Boston.
- Hitchcock, E., Jr. 1865. *A supplement to the ichnology of New England*. 90 pp. Wright and Potter, Boston.
- Huene, F. von. 1906. Über die Dinosaurier der aussereuropäischen Trias. *Geologische und Paläontologische Abhandlungen*, **8**: 97–156.
- Huene, F. von. 1908. Die Dinosaurier der europäischen Triasformation mit Berücksichtigung der aussereuropäischen Vorkommnisse. *Geologische und Paläontologische Abhandlungen, Supplement*, **1**: 1–419, Atlas.
- Huene, F. von. 1914a. Nachträge zu meinen früheren Beschreibungen triassischer Saurischia. *Geologische und Paläontologische Abhandlungen*, **13**: 69–82.
- Huene, F. von. 1914b. Saurischia et Ornithischia Triadica ("Dinosauria" Triadica). *Fossilium Catalogus 1. Animalia*, **4**: 1–21. Junk, Berlin.
- Huene, F. von. 1932. Die fossile Reptil-Ordnung Saurischia, ihre Entwicklung und Geschichte. *Monographien zur Geologie und Palaeontologie*, (1)**4**: 1–361, Atlas.
- Lull, R.S. 1915. Triassic Life of the Connecticut Valley. *Bulletin of the Connecticut State Geological and Natural History Survey*, **24**: 1–285.
- Lull, R.S. 1953. Triassic life of the Connecticut Valley. Revised. *Bulletin of the Connecticut State Geological and Natural History Survey*, **81**: 1–331.
- Marsh, O.C. 1877. Introduction and succession of vertebrate life in America. *American Journal of Science*, (3)**14**: 337–378.
- Marsh, O.C. 1882. Classification of the Dinosauria. *American Journal of Science*, (3)**23**: 81–86.
- Marsh, O.C. 1885. Names of extinct reptiles. *American Journal of Science*, (3)**29**: 169.
- Marsh, O.C. 1889. Notice of new American Dinosauria. *American Journal of Science*, (3)**37**: 331–336.
- Marsh, O.C. 1891. Notice of new vertebrate fossils. *American Journal of Science*, (3)**42**: 265–269.
- Marsh, O.C. 1892. Notes on Triassic Dinosauria. *American Journal of Science*, (3)**43**: 543–546.
- Marsh, O.C. 1893. Restoration of *Anchisaurus*. *American Journal of Science*, (3)**45**: 169–170.
- Marsh, O.C. 1895. On the affinities and classification of the dinosaurian reptiles. *Geological Magazine*, (4)**3**: 388–400.
- Marsh, O.C. 1896. The dinosaurs of North America. *United States Geological Survey 16th Annual Report*, 1894–96: 133–244.
- Paul, G.S. 2010. *The Princeton field guide to dinosaurs*. 320 pp. Princeton University Press, Princeton.
- Pol, D., Garrido, A. & Cerda, I.A. 2011. A new sauropodomorph dinosaur from the Early Jurassic of Patagonia and the origin and evolution of the sauropod-type sacrum. *PLoS ONE*, **6**(1): 1–24.
- Sereno, P.C. 1999. The evolution of the dinosaurs. *Science*, **284**: 2137–2147.
- Sereno, P.C. 2007. Basal Sauropodomorpha: historical and recent phylogenetic hypotheses, with comments on *Ammosaurus major* (Marsh, 1889). *Special Papers in Palaeontology*, **77**: 261–289.

- Upchurch, P., Barrett, P. & Galton, P.M.** 2007. A phylogenetic analysis of basal sauropodomorph relationships: implications for the origin of sauropod dinosaurs. *Special Papers in Palaeontology*, **77**: 57–90.
- Yates, A.M.** 2004. *Anchisaurus polyzelus* (Hitchcock): the smallest known sauropod dinosaur and the evolution of gigantism amongst sauropodomorph dinosaurs. *Postilla*, **230**, 1–58.
- Yates, A.M.** 2010. A revision of the problematic sauropodomorph dinosaurs from Manchester, Connecticut and the status of *Anchisaurus* Marsh. *Palaeontology*, **53**: 739–752.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3572**PSITTACULINAE Vigors, 1825 (Aves): proposed conservation of usage**

Richard Schodde

clo Australian Biological Resources Study, PO Box 787, Canberra, ACT 2601, Australia (e-mail: rschodde@grapevine.com.au)

Leo Joseph

Australian National Wildlife Collection, CSIRO Ecosystem Sciences PO Box 424, Canberra, ACT 2601 Australia (e-mail: Leo.Joseph@csiro.au)

Walter J. Bock

Department of Biological Sciences, Columbia University, 1212 Amsterdam Avenue, Mail Box 2428, New York City, NY 10027, U.S.A. (e-mail: wb4@columbia.edu)

Abstract. The purpose of this application, under Articles 78.1 and 80.2.2 of the Code, is to conserve current usage of the family-group name PSITTACULINAE Vigors, 1825 as valid for the Indo-Australasian long-tailed parrots. This would be effected by designation of the generic name *Psittacula* Cuvier, 1800 as its type genus. Suppression of the junior homonym *Psittacula* Kuhl, 1820, upon which PSITTACULINAE Vigors was originally based, will maintain stability in nomenclature. Suppression of the simultaneously published family-group name PALAEORNITHINAE Vigors, 1825, which was originally applied to the Indo-Australasian long-tailed parrots, is desirable as well.

Keywords. Nomenclature; taxonomy; Aves; PSITTACULINAE; *Psittacula*; PALAEORNITHINAE; *Palaeornis*; parrots; Africa; Asia; Indonesia; Australasia.

1. The long-tailed, often coral-billed parrots of tropical Africa, southern Asia, Indonesia and Australasia comprise ca. 38 extant species (Dickinson, 2003, pp. 190–194) in a monophyletic assemblage of genera comprising *Psittacula* Cuvier, 1800, *Prioniturus* Wagler, 1832, *Psittinus* Blyth, 1842, *Tanygnathus* Wagler, 1842, *Geoffroyus* Bonaparte, 1850, *Eclectus* Wagler, 1832, *Alisterus* Mathews, 1911, *Aprosmictus* Gould, 1843 and *Polytelis* Wagler, 1832 (Smith, 1975, p. 43; Homberger, 1980, pp. 172–179, 184; Wright et al., 2008, p. 2148; Schweizer et al., 2010, p. 988). Whether at subfamily or tribal rank, this group has been known almost universally for over 50 years in mainstream ornithological literature and media by the family-group name PSITTACULINAE Vigors, 1825 (Verheyen, 1956; Smith, 1975; Wolters, 1975; Forshaw, 1978, 1981, 1989, 2002; Homberger, 1980, 2002; Campbell & Lack, 1985; Bock, 1994; Collar, 1997; Schodde, 1997; Higgins, 1999; Dickinson, 2003; de Kloet & de Kloet, 2005; Christidis & Boles, 2008; Mayr, 2008, 2010; Wright et al., 2008; Schweizer et al., 2010 and *Wikipedia*, 2011). The one exception known to us is Condon's (1975, p. 181) use of PALAEORNITHINAE Vigors, 1825 – see below.

2. Vigors (1825a, p. 400) introduced the subfamily PSITTACULINAE by indication (Article 12.2.4) in the spelling PSITTACULINA, and based it expressly and exclusively on *Psittacula* Kuhl (1820, pp. 8 – 9). Kuhl's (l.c.) *Psittacula* comprised 27 species of small, short-tailed parrots of the global tropics, including such diverse groups as the South American parrotlets (*Forpus* Boie, 1858), African lovebirds (*Agapornis* Selby, 1836) and southeast Asian hanging-parrots (*Loriculus* Blyth, 1850); no type species was designated. Excluded altogether were the larger Afro-Asian long-tailed parrots known today as *Psittacula*, together with their allied Indo-Australasian genera. That Vigors (1825a) intentionally kept the long-tails out of his PSITTACULINAE is clear because in the very paper in which he published PSITTACULINAE he placed the long-tails instead in a separate new subfamily, PALAEORNITHINAE (as PALAEORNINA, here corrected under Article 32.5.3.1). That name is also available by indication (Article 12.2.4). The type species of the type genus, *Palaeornis* Vigors, 1825, is *Psittacus alexandri* Linnaeus, 1758 (p. 97), by original designation (Vigors, 1825b, p. 46).

3. On through the 19th century, mainstream ornithological literature (Spix, 1824; Wagler, 1832; Swainson, 1837; Gray 1840, 1845; Finsch, 1868; Reichenow, 1881; Salvadori, 1891) continued to apply *Psittacula* to small, short-tailed parrots, focussing on the tropical American parrotlets. It also attributed the name variously to Brisson (1760, vol. 4, p. 384), Cuvier (unreferenced), Illiger (1811, p. 200) and Kuhl (1820, p. 8). Yet applications of *Psittacula* varied among these last four authors. That of Brisson is unavailable for zoological nomenclature (Opinion 37, Opinions Rendered by the International Commission on Zoological Nomenclature, Smithsonian Miscellaneous Publications **2013**: 87–88, 1911; Direction 16, Opinions and Declarations 1(C): 81–88, 1955; Direction 105, BZN **20**: 343–344, October 1963). That of Illiger, which attributed *Psittacula* to Cuvier (unreferenced), lacked a description, treated the name as a junior synonym of *Psittacus* Linnaeus, 1758, and did not associate any species directly with it. That of Kuhl, which treated *Psittacula* as a separate section of *Psittacus* Linnaeus, 1758, may be regarded as an independent, new name because Kuhl made no direct or unambiguous reference to any earlier usage. Only he, moreover, provided a generic description and unambiguous citation of all species that he included in *Psittacula*. One of these, the tropical American parrotlet *Psittacus passerinus* Linnaeus, 1758 (= *Forpus passerinus* (Linnaeus, 1758)), was subsequently designated as its type species by G.R. Gray (1840, p. 53) who there attributed authorship of *Psittacula* to Kuhl alone by express reference.

4. Mathews (1917, p. 169) found that, as a name, *Psittacula* had been published earlier by Cuvier in 1800 on table 2, volume 1 of his *Leçons d'Anatomie Comparée*. It is available there under Opinion 39 (Opinions Rendered by the International Commission on Zoological Nomenclature, Smithsonian Miscellaneous Publications **2060**: 91, 1912) and Direction 32 (Opinions and Declarations 1(C): 307–328, 1956). This Opinion makes available Latin names in the tables of volume 1 of the *Leçons* where they are identifiable, via French names, from specified references. The first listed of these specified references was Cuvier's own *Tableau élémentaire d'Histoire Naturelle* (1797). Contrary to Mathews (1917, p. 169), *Psittacula* Cuvier is not made available by reference to *Psittacus alexandri* (= *Psittacus alexandri* Linnaeus, 1758) and *P. rufirostris* (= *Psittacus krameri* Scopoli, 1769) in the *Leçons*, but by reference, through the French name “Perruches” used for *Psittacula* in the *Leçons*,

to those same nominal specific names in Cuvier's *Tableau* (pp. 237–238), cf. Article 12.2.5 of the Code. G.M. Mathews, 1925. *The Birds of Australia. Supplements 4 & 5. Bibliography of the Birds of Australia Pts 1 & 2.* vii, 149 pp. H.F. & G. Witherby, London. records on p. 30 that Cuvier's *Tableau elementaire* dated An. 6 was reviewed on (i.e. issued by) 24 December 1797, and that the *Lecons* dated 1800 (vols. 1 & 2) was reviewed on 19 April 1800. Mathews (1917) went on to confirm the application of *Psittacula* by designating the originally included *Psittacus alexandri* Linnaeus, 1758, as its type species, thereby making *Psittacula* Cuvier, 1800 a senior objective synonym of *Palaeornis* Vigors, 1825 (for which see para. 2 above).

5. Although Mathews's (1917, p. 169) action switched *Psittacula* from stubby-tailed American parrots to long-tailed species in Afro-Asia, and displaced *Palaeornis* Vigors, which had been used for the latter for over 90 years, it was accepted by Peters (1937, p. 241) and, henceforth, by the rest of ornithology to this day. Along with it, the family-group name PSITTACULINAE Vigors was also switched to the Indo-Australasian long-tails (see para. 1 above), in the belief that its type genus was *Psittacula* Cuvier, 1800, not *Psittacula* Kuhl, 1820 (e.g. Bock 1994, p. 140). This shift, together with Bock's (1994) choice of PSITTACULINAE over PALAEORNITHINAE as first reviser (Article 24.2.2), displaced PALAEORNITHINAE Vigors as well.

6. The issue of the type genus of PSITTACULINAE Vigors falls under the jurisdiction of Article 65.2 of the Code. As matters presently stand, this in-use name is invalid because it is based on *Psittacula* Kuhl, 1820, a junior homonym of *Psittacula* Cuvier, 1800 (Article 39 of the Code). In its place, moreover, PALAEORNITHINAE Vigors is available and valid as the next senior family-group name for the Indo-Australasian long-tailed parrots despite Bock's (1944) First Reviser action. Yet reviving PALAEORNITHINAE for these parrots would, we believe, upset stability in nomenclature because it would mean more name shifting and would engender ongoing uncertainty about names drawn from *Psittacula* Cuvier and *Palaeornis* Vigors. So, we refer the case to the Commission to maintain PSITTACULINAE and *Psittacula* in their present usage.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to conserve usage of the family-group name PSITTACULINAE Vigors, 1825 by ruling that its type genus is *Psittacula* Cuvier, 1800;
 - (b) to suppress the family-group name PALAEORNITHINAE Vigors, 1825 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Psittacula* Cuvier, 1800 (gender: feminine), type species *Psittacus alexandri* Linnaeus, 1758, by subsequent designation of Mathews (1917), type genus of the family-group name PSITTACULINAE, as ruled in (1)(a) above;
- (3) to place on the Official List of Specific Names in Zoology the name *alexandri* Linnaeus, 1758, as published in the binomen *Psittacus alexandri* Linnaeus, 1758, specific name of the type species of *Psittacula* Cuvier, 1800;
- (4) to place on the Official List of Family-Group Names in Zoology the name PSITTACULINAE Vigors, 1825, type genus *Psittacula* Cuvier, 1800, as ruled in (1)(a) above;

- (5) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name PALAEORNITHINAE Vigors, 1825, junior objective synonym of PSITTACULINAE Vigors, 1825, by the First Reviser action of Bock (1994), as suppressed in (1)(b) above.

Acknowledgements

The application has been reviewed by the Standing Committee on Ornithological Nomenclature of the International Ornithological Committee.

References

- Bock, W.J. 1994. History and nomenclature of avian family-group names. *Bulletin of the American Museum of Natural History*, **222**: 1–281.
- Brisson, M.-J. 1760. *Ornithologie ou méthode contenant la division des oiseaux en ordres, sections, genres, especes et leurs variétés*, vol. IV. 576, liv pp. J.-B. Bauche, Paris.
- Campbell, B. & Lack, E. (Eds.). 1985. *A dictionary of birds*. 670 pp. Buteo Books, Vermillion, SD.
- Christidis, L. & Boles, W.E. 2008. *Systematics and taxonomy of Australian birds*. 277 pp. CSIRO Publishing, Melbourne.
- Collar, N.J. 1997. Family Psittacidae, Parrots. Pp. 280–477 in del Hoyo, J., Elliot, A. & Sargatal, J. (Eds.), *Handbook of the birds of the world*, vol. 4. Lynx Edicions, Barcelona.
- Condon, H.T. 1975. *Checklist of the Birds of Australia Part 1 Non-passerines*. xx, 311 pp. Royal Australasian Ornithologists Union, Melbourne.
- Cuvier, G. 1797 (as An. 6). *Tableau élémentaire de l'Histoire Naturelle des Animaux*. xvi, 710 pp., XIV pls. Badouin, Paris.
- Cuvier, De G. 1800 (as An. VIII). *Leçons d'anatomie comparée*, Tome 1. xxxi, 521 pp., 9 tables. Badouin, Paris.
- de Kloet, R. & de Kloet, S. 2005. The evolution of the spindlin gene in birds: sequence analysis of an intron of the spindlin W and Z gene reveals four major divisions of the Psittaciformes. *Molecular Phylogenetics and Evolution*, **36**: 706–721.
- Dickinson, E.C. (Ed.). 2003. *The Howard and Moore complete checklist of the birds of the world*, 3rd Ed. 1039 pp. Christopher Helm, London.
- Finsch, O. 1868. *Die Papageien, Monographisch bearbeitet*, Bd. 2. vii, 996 pp. E.J. Brill, Leiden.
- Forshaw, J.M. 1978. *Parrots of the world*, Ed. 2. 616 pp., 158 pls. Lansdowne Editions, Melbourne.
- Forshaw, J.M. 1981. *Australian parrots*, Ed. 2. 312 pp., 56 pls. Lansdowne Editions, Melbourne.
- Forshaw, J.M. 1989. *Parrots of the world*, Ed 3. Lansdowne and Kevin Weldon, New South Wales.
- Forshaw, J.M. 2002. *Australian Parrots*, Ed 3. Robina Press, Queensland.
- Gray, G.R. 1840. *A list of the genera of birds, with an indication of the typical species of each genus*. viii, 80 pp. R. & J.E. Taylor, London.
- Gray, G.R. 1845. *The genera of birds*, vol. 2. iv, 301–483 pp. Longman, Brown, Green, and Longmans, London.
- Higgins, P. (Ed.). 1999. *Handbook of Australian, New Zealand and Antarctic birds, vol. 4. Parrots to dollarbird*. 1248 pp. Oxford University Press, Melbourne.
- Homberger, D.G. 1980. Funktionell-morphologische Untersuchungen zur Radiation der Ernährungs – und Trinkmethoden der Papageien (Psittaci). *Bonner Zoologische Monographien*, **13**: 1–192.
- Homberger, D.G. 2003. The comparative biomechanics of a predator-prey relationship: The adaptive morphologies of the feeding apparatus of Australian black-cockatoos and their foods as a basis for the reconstruction of the evolutionary history of Psittaciformes. Pp. 203–228 in Bels, V.L., Gasc, J.-P. & Casinos, A. (Eds.), *Vertebrate Biomechanics and Evolution*. BIOS Scientific Publishers, Oxford.

- Illiger, C.** 1811. *Prodromus systematis Mammalium et Avium additis terminis zoographicis utriusque classis eorumque versione germanica*. xviii, 301 pp. C. Salfeld, Berlin.
- Kuhl, H.** 1820. Conspectus Psittacorum. *Nova Acta Physico-medica Academiae Caesareae Leopoldino-Carolinae*, **10**: 1–104, pls. I–III.
- Mathews, G.M.** 1917. *The birds of Australia*, vol. 6, pt. 2. Pp. 105–216. Witherby & Co., London.
- Mayr, G.** 2008. The phylogenetic affinities of the parrot taxa *Agapornis*, *Loriculus* and *Melopsittacus* (Aves: Psittaciformes): hypotarsal morphology supports the results of molecular analyses. *Emu*, **108**: 23–27.
- Mayr, G.** 2010. Parrot interrelationships - morphology and the new molecular phylogenies. *Emu*, **110**: 348–357.
- Peters, J.L.** 1937. *Check-list of birds of the world*, vol. 3. xiii, 311 pp. Harvard University Press, Cambridge, Massachusetts.
- Reichenow, A.** 1881. Conspectus Psittacorum. Systematische Uebersicht aller bekannten Papageienarten. *Journal für Ornithologie*, **29**: 1–49, 113–177, 225–289, 337–398.
- Salvadori, T.** 1891. Catalogue of the Psittaci, or parrots. *Catalogue of the birds in the British Museum*, vol. 20. xvii, 658 pp. British Museum, London.
- Schodde, R.** 1997. Psittacidae. Pp. 109–218 in Houston, W.M.K. & Wells, A. (Eds.), *Zoological catalogue of Australia*, vol. 37. 2. *Aves (Columbidae to Coraciidae)*. CSIRO Publishing, Melbourne.
- Schweizer, M., Güntert, M., Seehausen, O. & Hertwig, S.T.** 2010. The evolutionary diversification of parrots supports a taxon pulse model with multiple trans-oceanic dispersal events and local radiations. *Molecular Phylogenetics and Evolution* **54**: 984–994. doi:10.1016/j.ympev.2009.08.021 3.
- Smith, G.A.** 1975. Systematics of parrots. *Ibis*, **117**: 18–65.
- Spix, J.B. von.** 1824. *Avium species novae, quas in itinere per Brasiliam annis MDCCCXVII–MDCCCXX jussu et auspiciis Maximiliani Josephi I. Bavariae Regis suscepto collegit et descripsit*, vol. 1. 90, 47 pp. F.S. Hübschmannus, München.
- Swainson, W.** 1837. On the natural history and classification of birds, vol. 2. vi, 398 pp. in Lardner, D. (Ed.), *The cabinet cyclopedia*, no. 92. Longman, Rees, Orme, Brown, Green & Longman & John Taylor, London.
- Vigors, N.A.** 1825a. On the arrangement of the genera of birds. *The Zoological Journal*, **2**: 391–405.
- Vigors, N.A.** 1825b. On a group of Psittacidae known to the ancients. *The Zoological Journal*, **2**: 37–65.
- Wagler, J.** 1832. Monographia Psittacorum. *Abhandlungen der Königl. Bayerischen Akademie der Wissenschaften, München*, **1**: 463–750.
- Wikipedia.** 2011. http://en.wikipedia.org/wiki/True_parrots (accessed 10 January, 2012).
- Wolters, H.U.** 1975. *Die Vogelarten der Erde*, Lief 1. Pp. 1–80. Paul Parey, Hamburg & Berlin.
- Wright, T., Schirtzinger, E., Eberhard, J., Graves, G., Sanchez, J., Capelli, S., Muller, H., Scharpegge, J., Chambers, G. & Fleischer, R.** 2008. A multilocus molecular phylogeny of the parrots (Psittaciformes): support for a Gondwanan origin during the Cretaceous. *Molecular Biology and Evolution*, **25**: 2141–2156.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on *Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by designation of a neotype
(Case 3532; see BZN 68: 41–46; 205)

Jakov Prkić

Getaldićeva 11, C-21000 Split, Croatia (e-mail: jakov.prkic1@inet.hr)

Paolo Mariottini

Dipartimento di Biologia, Università 'RomaTre', Viale Marconi 446, I-00146 Roma, Italy (e-mail: mariotpa@uniroma3.it)

Marco Oliverio

Dipartimento di Biologia e Biotechnologie 'Charles Darwin', La Sapienza University, Viale dell'Università 32, I-00185 Roma, Italy
(e-mail: marco.oliverio@uniroma1.it)

Anders Warén

Department of Invertebrate Zoology, Swedish Museum of Natural History, Box 50007, SE-10405 Stockholm, Sweden (e-mail: anders.waren@nrm.se)

In the present state of our knowledge, we do not support this application, and we raise doubts on the reasons brought to support it. In our opinion, the original type material (Exeter Museum) consists of two conspecific specimens, both referable to *Cerithiopsis barleei* Jeffreys, 1867 (therefore, the type designation by Marshall was correct); the 'probable syntype BMNH 20090384' would not help in identifying with certainty the species, since it belongs to a complex of cryptic species (named and unnamed), which in most of the cases can be diagnosed only by soft parts morphology and/or genetics.

1. Montagu's *Murex tubercularis*.

Montagu's (1803) description of *Murex tubercularis* fits at least 10 Recent European species of cerithiopsid. Montagu (1808) included an additional feature ('It has three series of tubercles of equal size on each volution, . . .'), which restricts the number of possible candidates but still does not allow a positive identification. However, the two specimens in Montagu's collection (Exeter Museum) do allow such identification since their identity is less equivocal than recently supposed. The first specimen is the lectotype of *M. tubercularis* designated by Marshall (1978, fig. 13C) and re-figured by Cecalupo & Robba (2010, figs. 1E-F, BZN 68: 43, figs. 1B–D). The existence of specimens lighter in colour (as the lectotype) was known to Montagu (1808): 'An elegant sub-pellucid, white variety of this shell was found near Dunbar, by Mr. LASKEY.' The protoconch (now partly broken) has been described by Marshall (1978, p. 83) as corresponding to published figures of *Cerithiopsis barleei* Jeffreys, 1867, and also its teleoconch features correspond to *C. barleei*, including the colour (whitish shells of this species are not rare). The lectotype certainly does not belong to *C. powelli* Marshall, 1978 as Cecalupo & Robba (2010; BZN 68: 42 March 2011) supposed, because this species clearly differs from *C. barleei*, not only in

protoconch sculpture but also in many teleoconch features. The second specimen (paralectotype) (it remained in Exeter and was never seen by Marshall), lacking the apex, has been figured by Cecalupo & Robba (2010, figs. 1C-D; BZN 68: 43, fig. 1A). It is ca. 6.5 mm long, with 9–10 teleoconch whorls, three rows of tubercles on all whorls, with an additional peripheral cord on the last whorl, and a smooth base (no basal cord). These features are perfectly concordant with those of *C. barleei*, and all characters of this specimen also fit the original description by Montagu. It is therefore easily argued that Montagu's concept of his *Murex tubercularis* was (at least originally) based on specimens of the species subsequently called *Cerithiopsis barleei* Jeffreys, 1867. Marshall's (1978) interpretation was thus correct and his designation of the only protoconch-bearing specimen as lectotype of *U. tubercularis* was justified.

2. The modern concept of *Cerithiopsis tubercularis*, and the type species of *Cerithiopsis*.

There is general agreement that the modern concept of *Cerithiopsis tubercularis* arose with Forbes & Hanley's (1850) introduction of the genus *Cerithiopsis*, nominally based on *Murex tubercularis* Montagu. The concept introduced by these two authors defines the type species of *Cerithiopsis* (i.e. *C. tubercularis* sensu Forbes & Hanley, 1851, nec Montagu) as a species characterized by: protoconch multispiral and smooth; teleoconch with three rows of tubercles; last whorl with 5 or 6 spirals (1 or 2 at the base); dimension ca. 6 mm. Forbes & Hanley's (1851, p. 364) description of their specimens includes also notes on the coloration of the head-foot: 'The general colour is white, with dusky markings; . . . The head and anterior half of the foot are dark.' (with a remark that 'Some specimens are flake white, except some sulphur-yellow points behind the eyes . . .'). According to our current knowledge (see below), this clearly indicates that they were mixing more species, of which at least one ('The head and anterior half of the foot are dark'; Forbes & Hanley, 1851) closely resembles the Croatian specimens figured by Prkić & Mariottini (2010) as '*C. tubercularis* (Montagu, 1803) sensu auct. nec Marshall (1978)'. This concept, underlying the use of the name '*Cerithiopsis tubercularis*' for specimens with a smooth protoconch, has been followed almost invariably by all subsequent authors. Among them, Jeffreys (1867) described the new species *C. barleei* comparing it with *C. tubercularis* [sensu Forbes & Hanley (1850–1851)], and found it to differ among other details by 'the upper whorls [protoconch] being finely striated in the line of the spire [axially]' (Jeffreys 1867, 269). For *C. tubercularis* Jeffreys (1867, 266) wrote: 'the first 4 or 5 whorls are quite smooth'. Remarkably, Jeffreys (1884) did not find specimens labelled '*Murex tubercularis*' during his study of Montagu's collection at Exeter. Apparently there was only a sample labelled '*Murex reticulatus*' that contained *C. tubercularis* (sensu Forbes & Hanley). Recently, Prkić & Mariottini (2010) have shown that more than one species correspond, with principal shell characters (apex and base), to the (erroneous) concept of *C. tubercularis* introduced by Forbes & Hanley (1850–1851). This complex comprises (at least in Croatia, northern Adriatic Sea) cryptic species, which can be diagnosed only by examining the soft parts morphology and are confirmed by ongoing genetic research (Modica, Mariottini, Prkić & Oliverio, unpublished), and other such morphotypes are known from the rest of the Mediterranean and the northeastern Atlantic.

3. Common usage and lectotype vs. neotype.

It is true that the prevailing usage of the name in the last 160 years has followed Forbes & Hanley's erroneous concept of *Cerithiopsis tubercularis*. Even after Marshall's lectotype designation, most authors have kept the old position, although Warén (1980) described *C. tubercularis* as a 'difficult species, the taxonomy of which still is unclear', and van Aartsen et al. (1984) used the denomination '*C. tubercularis* auct.', and noted that the lectotype 'most probably belongs to the species so far known as *C. barleei* Jeffreys, 1867', thereafter concluding: 'Nevertheless it seems that the most common European *Cerithiopsis* species, which has been known for many years as *C. tubercularis* (Montagu, 1803) should change its name, whereas the much more rare *C. barleei* should be called *C. tubercularis*.' The same opinion was expressed by P. Bouchet, who in 1986 saw both syntypes in EXEMS (pers. comm. between Bolton, Cecalupo and Robba). Admittedly, changes in the nomen usage would affect (from the purely nomenclatural point of view) the name of some common European species, one of which is the type species of the genus *Cerithiopsis*, which in turn is the type genus of the family CERITHIOPSIDAE.

However, we highlight again here that *Cerithiopsis tubercularis* sensu auctt. (non Montagu) actually consists of a complex of cryptic species, difficult or even impossible to identify by examining only the shell characters. The prevailing usage has in fact been to apply the name *Cerithiopsis tubercularis* to several different species, although it is mostly impossible (by shell characters only) to say which one in each case. Therefore, it would neither be possible to identify with certainty which species Forbes & Hanley (1851) intended when introducing the genus *Cerithiopsis*, nor what species the 'probable syntype BMNH 20090384' belongs to, although it clearly belongs to *Cerithiopsis* s. str. The prevailing usage of the name *C. tubercularis* has not been unequivocal, being referred to more than one species, and thus, suppressing Marshall's (1978) lectotype designation and designating the 'probable syntype BMNH 20090384' as a neotype would not contribute significantly to nomenclatural stability, but would simply move the problem to another group of named and unnamed species. In fact, this solution would simply maintain as valid *Cerithiopsis barleei* Jeffreys, 1867, leaving the correct identification of *C. tubercularis* to a future study.

4. We recommend here that the 'probable syntype BMNH 20090384' should NOT be designated as neotype of any taxon (obviously the indication of this specimen as neotype by Cecalupo & Robba (2010) was not intended as a designation, otherwise it would be invalid due to the concurrent existence of the lectotype), and that, before taking any decision, the intricate puzzle of the species complex of *C. tubercularis* sensu auctt. must be solved based on the study of live collected specimens, with types designated from specimens characterised on morphology and colour patterns of the living animals (even a perfect shell is not what is needed here) and genetics.

At that point, the following two alternative possibilities would be available, and we feel it would not be wise to choose now either of them at the present state of our knowledge:

A. The Commission does not suppress Marshall's (1978) designation, which was valid, correctly interpreting Montagu's original concept of *Murex tubercularis*. The name *tubercularis* Montagu, 1803 is placed on the Official List of Specific Names in Zoology as defined by the lectotype designated by Marshall (1978). This would mean

that *Cerithiopsis tubercularis* (Montagu, 1803) eventually becomes a senior synonym of *C. barleei* Jeffreys, 1867.

B. The Commission suppresses Marshall's (1978) designation, and a neotype is designated based on a morphologically and genetically characterised specimen. The name *tubercularis* Montagu, 1803 is placed on the Official List of Specific Names in Zoology as defined by the designated neotype. This procedure would maintain as valid *Cerithiopsis barleei* Jeffreys, 1867, and preserve the name of the type species of the genus *Cerithiopsis*, probably based on one of the species originally intended by the authors (Forbes & Hanley, 1850–1851).

Additional references

- Aartsen, J.J. van, Menkhorst, H.P.M.G. & Gittenberger, E. 1984. The marine Mollusca of the Bay of Algeciras, Spain, with general notes on *Mitrella*, Marginellidae and Turridae. *Basteria, Supplement*, 2: 1–135.
- Forbes, E. & Hanley, S. 1850–1851. *A history of British Mollusca and their shells*, vol. 3. 616 pp. J. Van Voorst, London.
- Jeffreys, J.G. 1884. Notes on colonel Montagu's collection of British shells. *Journal of Conchology*, 2: 1–4.
- Montagu, G. 1808. *Supplement to Testacea Britannica with additional plates*. v, 7–184 pp., 17–30 pls. S. Woolmer, Exeter.
- Warén, A. 1980. Marine Mollusca described by John Gwyn Jeffreys, with the location of the type material. *The Conchological Society of Great Britain and Ireland, Special publication*, 1: 1–60.

Comment on the proposed resolution of homonymy between CHILODONTINAE Eigenmann, 1910 (Pisces, Characiformes) and CHILODONTINAE Wenz, 1938 (Mollusca, Gastropoda)
(Case 3555; see BZN 68: 175–179; 281–282)

Rüdiger Bieler and Richard E. Petit

Department of Zoology, Field Museum of Natural History, Chicago, Illinois 60605, U.S.A.

(e-mail: rbieler@fieldmuseum.org; r.e.petit@att.net)

We wish to express our support for the modification of CHILODONTINAE Wenz, 1938 to CHILODONTAINAE to avoid homonymy. There is no name available to replace the gastropod family-group name which is in long and well-established usage and its retention in emended form is the best possible solution.

Comment on the proposed establishment of availability of *Balintus* d'Abrera, 2001, *Gulliveria* d'Abrera & Bálint, 2001, *Salazaria* d'Abrera & Bálint, 2001, *Megathecla* Robbins, 2002 and *Gullicaena* Bálint, 2002 (Insecta, Lepidoptera, LYCAENIDAE)
(Case 3458; see BZN 65: 188–193; 66: 271–272, 349–351; 68: 206–211)

Robert K. Robbins

*Smithsonian Institution, National Museum of Natural History, Stop 105,
PO Box 37012, Washington, DC 20013–7012 U.S.A.*
(e-mail: RobbinsR@SI.edu)

Gerardo Lamas

*Museo de Historia Natural, Universidad Nacional Mayor de San Marcos,
Apartado 14–0434, Lima-14, Perú* (e-mail: glamasm@unmsm.edu.pe)

This is a response to the comments of Bálint & d'Abrera (BZN 68: 206–210) and of Craig (BZN 68: 210–211). The core issue of Case 3458 is whether the eight generic names proposed by d'Abrera and Bálint (d'Abrera, 2001) satisfy Article 13.1 of the Code. In the original application and subsequent comment, we noted that the words in these generic descriptions differentiate the type species, not the genus. The characters differentiate the type species, not the genus. Since Article 13.1 was not satisfied, we proposed a solution in which all names that were in use were to be considered to be available and those that were not in use were to be considered to be unavailable. Evidence as to which names were in use was presented in the original application.

The purpose of this comment is to show (briefly using representative examples) that the recent comments on Case 3458 by Bálint & d'Abrera are not relevant to the core issue of Case 3458 and that the recent comments on Case 3458 by Craig are not accurate.

Paragraphs 1–7 and 10–11 in the comments of Bálint & d'Abrera make the case that these authors intended to make their generic names available. No one has argued otherwise, so far as we are aware, but it is not relevant because intent, by itself, does not satisfy Article 13.1.

Paragraph 8 in the comments of Bálint & d'Abrera makes the point that four generic names that were published in 1973 by Eliot were worded similarly to the descriptions of d'Abrera and Bálint, but have been considered to be available. In response, the 1973 generic names were made available under the Second Edition of the Code (1964), which had a different wording from the Fourth Edition of the Code (1999). Further, the wording of the 1973 descriptions is not identical to that used by d'Abrera and Bálint and, in evident contrast to d'Abrera and Bálint, Eliot provided generic differentiating characters for his new genera. For these reasons, each case needs to be decided on its own merits, and a conclusion in one case need not apply to the other.

Paragraph 9 in the comments of Bálint and d'Abrera reinterprets their original verbal description to say that they distinguished the genus, not the type species. But this verbal reinterpretation is falsified by their proposed characters, which distinguish the type species, not the genus.

Paragraphs 12–16 & 18 in the comments of Bálint & d'Abrera refer to a range of perceived ethical issues. The first response is that these comments are not relevant because the Code of Ethics states that 'the Commission is not empowered to

investigate or rule upon alleged breaches of [ethical principles]'. The second response is that we view the ethical issues raised by this case very differently than do Bálint and d'Abrera, as alluded to in an earlier comment, but these comments are not an appropriate forum to discuss ethical issues, as just noted. The third response is that the Preamble of the Code states that all Code provisions and recommendations, including the Code of Ethics, are subservient to the promotion of stability and universality. In each of our publications related to Case 3458, we have made clear that this shared core value is our guiding principle. The fourth response is that the Commission has considered three applications by Lamas during his term as a Commissioner. In every one of these cases Lamas has recused himself (abstained) from voting on the application.

Paragraphs 17 & 19 in the comments of Bálint & d'Abrera contain words like tumult, chaos, destabilising, manipulative, and agenda. We are at a loss to see how the arguments of which these 'emotive' words are a part are relevant or appropriate to a simple case of nomenclatural availability.

The recent comments of Craig are inaccurate. For example, Craig refers to d'Abrera and Bálint's 'eight new genera, that nobody has yet questioned with regard to the soundness of the concepts involved.' The lack of nomenclatural soundness is the reason for the original application in Case 3458. The lack of taxonomic soundness is the reason that the seven species placed in *Salazaria* d'Abrera and Bálint (in d'Abrera, 2001) were later treated as members of four different genera, as noted in the original application. Regardless of which taxonomy is correct, Craig's statement is not true.

Other recent comments by Craig make unsubstantiated allegations. As an example, 'For reasons that the applicants have never fully explained, the Commission is being asked to make five (supposedly unavailable) names available, two of which are to be immediately suppressed and thus made unavailable, along with six others, five of which have barely been discussed in the application and appear to represent taxa for which there would then be no alternative generic names.' We make no pretense of being able to understand this sentence, but in the original application we explained the reasons for our proposal and gave the evidence to support it. To be blunt, we are troubled that Craig accuses us of not fully explaining our proposal without specifying those issues that were not fully explained.

In short, the core issue of Case 3458 is whether the eight genera proposed by d'Abrera and Bálint in 2001 satisfied Article 13.1 of the Code. The recent comments of Bálint & d'Abrera and of Craig do not address this simple issue.

Comment on the proposed precedence of *Sematura* Dalman, 1825 over *Mania*

Hübner, 1821 Lepidoptera, SEMATURIDAE

(Case 3531; see BZN 68: 184–189)

Vitor O. Becker

Instituto Uiraçu, P.O.Box 01, 45880–000 Camacan, Bahia, Brazil

(e-mail: vitor.o.becker@gmail.com)

I believe it is not fair for any author to ignore the laws of priority. In this case, is it Huebner's fault that subsequent authors made mistakes or ignored his work?

The priority of *Mania* over *Sematura* was well established as far back as 1892, by Kirby, in the first comprehensive moth catalogue (Kirby, 1892 – an important reference overlooked in the proposal). Before that date *Sematura* had been used only a few times (the dates of both *Mania* and *Sematura* were also well clarified in Sherborn; therefore there is no reason to keep using the latter). Checking the references listed in the proposal it is clear that the majority of the authors are not taxonomists but mostly list compilers, who usually apply whichever names are currently in use.

Another argument used in the proposal is that *Sematura* was used to establish SEMATURIDAE. To me this is irrelevant as there are many cases in Lepidoptera, where family-group names are based on junior synonyms (EPIPASCHIINAE, PERICOPINAE, etc.).

Also, ‘current use’ is not an argument strong enough to justify this kind of action. The Commission itself has reestablished ‘forgotten’ names in cases much more important than this, as in resurrecting *Plutella xylostella* L. against *P. maculipennis* Z., a worldwide pest where hundreds of publications had used the latter name.

Additional references

Kirby, W.F. 1892. *A synonymic catalogue of Lepidoptera Heterocera. (Moths). Vol. 1 Sphinges and bombyces.* xi, 951, 45 pp. Gurney & Jackson, London.

Comment on the proposed conservation of *Crotalinus catenatus* Rafinesque, 1818 (currently *Sistrurus catenatus*) and *Crotalus tergeminus* (currently *Sistrurus tergeminus*; Reptilia, Serpentes) by designation of neotypes for both species (Case 3571: see BZN 68: 271–274)

Brian I. Crother

Department of Biology, Southeastern Louisiana University, Hammond, LA 70402, U.S.A. (e-mail: bcrother@selu.edu)

Jay M. Savage

Department of Biology, San Diego State University, San Diego, CA 92182, U.S.A. (e-mail: savyl@cox.net)

Andrew T. Holycross

Mesa Community College, Red Mountain Campus, Mesa, AZ, 85207; School of Life Sciences, Arizona State University, Tempe, AZ 85287, U.S.A. (e-mail: andrewholycross@gmail.com)

In our case we proposed the designation of USNM 86472 at the National Museum of Natural History, U.S.A., from Winfield, Cowley, Kansas, U.S.A. as the neotype of *Crotalus tergeminus*, the Western Massassagua. That decision was based on the lack of agreement by previous authors as to the provenance of the two syntypes of the nominal species variously cited to be from between the Mississippi River and the Rocky Mountains headwaters of the Arkansas River, from what is now western Iowa

or from northeastern Colorado (Dundee, '1996', 1997, p. 8). Stephen Mackessy of the University of Northern Colorado (personal communication) recently informed us that *Sistrurus tergeminus* is unknown from northeastern Colorado. However, the taxon still occurs in southwestern Iowa (Christiansen & Fieselman, 1993). It now seems evident that the syntypes of this form were collected during a side trip up the Boyer River (now in Harrison County, Iowa) from the Missouri River where Say (in James, 1822, pp. 45–46) states 'we saw numbers of the smaller species of rattle snake'. Fortunately, we now have been able to locate well-preserved examples of this taxon from western Iowa. In the light of this information we ask the International Commission on Zoological Nomenclature to set aside our request to designate USNM 86472 as the neotype of *Crotalus tergeminus*. We ask instead that the Commission act to designate specimen at Drake University DU 3917 from 4.5 miles north of Hastings, Willow Slough, Mills County, Iowa, U.S.A. as the neotype of *Crotalus tergeminus* Say in James (1822, p. 499). Note that the Mills County snake is from a locale approximately 40 miles south of Harrison County, Iowa. The proposed neotype is a *Sistrurus* 715 mm in total length, having 157 ventrals, 28 subcaudals, a dorsal pattern of 42 dark brown blotches that are in marked contrast to the lighter ground color and the venter light with numerous darker markings.

We take this opportunity to clarify our request that USNM 526 be designated the neotype of *Crotalinus catenatus* Rafinesque 1818, p. 41. This snake may be the holotype (Adler, 1963) of *Crotalus messasaugus* Kirtland that is the next available name for the Eastern Massasauga, in the event that our request to establish a neotype for *Crotalinus catenatus* is denied. Adler (1963) has provided a detailed description of USNM 526 whose salient characters are: 830 mm in total length, 138 ventrals, 19 subcaudals, dorsum very dark with blotches not strongly contrasting with ground color, and venter black with some light markings.

In consequence of the above we request the International Commission to substitute the following in place of 8(2) in our original application when considering Case 3571:

(2) to use its specific powers to designate specimen Drake University DU 3917 from Mills County, Iowa as the neotype of *Crotalus tergeminus* Say in James, 1822;

Additional reference

Christiansen, J. & Fieselman, J. 1993. Massasagua rattlesnake bites in Iowa. *Iowa Medicine*, 83(5): 187–191.

Comment on *Stegosaurus* Marsh, 1877 (Dinosauria, Ornithischia): proposed replacement of the type species with *Stegosaurus stenops* Marsh, 1887

(Case 3536; see BZN 68: 127–133; 213–217)

Vahe Demirjian

11 Canyon Terrace, Newport Coast, CA 92657 U.S.A.

(e-mail: vahedemirjian@cox.net)

I wish to supplement my previous comment (BZN 68: 215–217) on Case 3536, with respect to putative individual variation reported by Maidment et al. (2008) for *Stegosaurus armatus*.

Carpenter (BZN 68: 215) notes that the range of variation within *Stegosaurus armatus* (sensu Maidment et al.) is suspect because it cannot be replicated in other large stegosaur samples (e.g. *Kentrosaurus aethiopicus*). However, it should be noted that most stegosaur taxa apart from *Stegosaurus unguatus* and *S. stenops* (sensu Carpenter & Galton, 2001) and *Kentrosaurus* (e.g. *Loricatosaurus*, *Chungkingosaurus*, etc.) are known only from holotypes or a few specimens (see Appendix 1 in Maidment et al.). For example, Barden & Maidment (2011) indicated that variation within specimens of *Kentrosaurus aethiopicus* from the Tendaguru Formation of Tanzania may be attributable to sexual dimorphism. Moreover, recent histological analysis of dermal armour in *Stegosaurus* (Hayashi et al., 2012) suggests that the morphology of dermal armor in stegosaurs can be influenced by ontogenetic factors (e.g. immaturity, old age). Therefore, Maidment et al. appear to be correct in interpreting variation within *Stegosaurus* as either ontogenetic or sexually dimorphic. For example, femur lengths for *Stegosaurus stenops* specimens DMNH 1483 and DMNH 2818 are given by Hayashi et al. as 950 mm and 1,048 mm respectively, while the femur of the holotype of *Stegosaurus stenops* (USNM 4934) is 1080 mm and the femur of *S. unguatus* specimen USNM 6646 measures 1200 mm (Lull, 1921, p. 117). By comparison, the femora of YPM 1853 (lectotype of *Stegosaurus unguatus*) and YPM 1858 are 1348 mm long (Carrano, 2006), while Galton (2001) reported the femoral length for USNM 4936 (referred by him to *Stegosaurus stenops*) as 1190 mm. Therefore, it seems parsimonious to conclude that DMNH 1483, DMNH 2818, USNM 4934, USNM 4936, USNM 6646, YPM 1853, and YPM 1858 are progressive ontogenetic stages of the same species, given the locality data for these specimens in Turner & Peterson (1999).

Although the holotype of *S. stenops* is by far the most complete *Stegosaurus* specimen, it should also be noted that *S. unguatus*, although based on less material than USNM 4934, is also based on material of taxonomic utility to be compared against other stegosaur genera. If *Stegosaurus stenops* is designated the type species of *Stegosaurus*, then *S. unguatus* would either become a junior subjective synonym of *S. stenops* or a referred species of *Stegosaurus*. Therefore, while I reaffirm my support for Case 3536, I also urge the Commission to address the priority of *S. unguatus* over *S. stenops* if the proposals in Case 3536 are approved by a final decision.

Additional references

- Barden, H.E. & Maidment, S.C.R. 2011. Evidence for sexual dimorphism in the stegosaurian dinosaur *Kentrosaurus aethiopicus* from the Upper Jurassic of Tanzania. *Journal of Vertebrate Paleontology*, 31(3): 641–651.
- Carrano, M.T. 2006. Body-size evolution in the Dinosauria. Pp. 225–268 in Carrano, M.T., Blob, R.W., Gaudin T.J. & Wible, J.R. (Eds.), *Amniote paleobiology: perspectives on the evolution of mammals, birds, and reptiles*. University of Chicago Press, Chicago.
- Hayashi, S., Carpenter, K., Watabe, M. & McWhinney, L.A. 2012. Ontogenetic histology of *Stegosaurus* plates and spikes. *Palaeontology*. doi: 10.1111/j.1475–4983.2011.01122.x
- Lull, R.S. 1921. The Cretaceous armored dinosaur, *Nodosaurus textilis* Marsh. *American Journal of Science*, (5)1(2):97–126.

Comment on the proposed conservation of usage of *Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia, Proboscidea) by designation of a neotype

(Case 3480; see BZN 66: 164–167, 358–359; 67: 96, 181–182, 333; 68: 80–81)

Spencer G. Lucas

New Mexico Museum of Natural History and Science, 1801 Mountain Road N. W., Albuquerque, New Mexico 87104 U.S.A.

(e-mail: spencer.lucas@state.nm.us)

Alberdi et al. (BZN 68: 80–81) oppose designating a diagnostic neotype for *Mastodon waringi*, the oldest valid species of *Haplomastodon*, in order to stabilize the name *Haplomastodon* (see Lucas, BZN 66: 164–167). They also oppose recognition of the remaining portions of the holotype of *Mastodon chimborazi*, which is the type species of *Haplomastodon* by original designation, as a means to stabilize *Haplomastodon* (see Ferretti, BZN 66: 358). The opposition to these steps by Alberdi et al. is based on their opinion that *Haplomastodon* Hoffstetter, 1950 is a junior subjective synonym of *Stegomastodon* Pohlig, 1912 (e.g. Prado et al., 2005). However, there is growing opposition to this subjective taxonomic judgment by those who regard *Haplomastodon* as either a distinct genus or as a junior subjective synonym of *Notiomastodon* Cabrera, 1929 (e. g., Ferretti, 2008, 2010; Lucas & Alvarado, 2010; Lucas et al., 2011; Asevedo et al., 2011; Cozzuol et al., 2011; Mothé et al., 2011). Furthermore, whether or not *Haplomastodon* is a junior subjective synonym of *Stegomastodon* is irrelevant to the need for a diagnostic neotype of the oldest valid species of *Haplomastodon*, given the long-standing and extensive use of the generic name *Haplomastodon*.

Additional references

- Asevedo, L., Winck, G.R., Mothé, D. & Avilla, L.S. 2011. Ancient diet of the Pleistocene gomphothere *Notiomastodon platensis* (Mammalia, Proboscidea, Gomphotheriidae) from lowland mid-latitudes of South America: Stereomicroscopy and tooth calculus analyses combined. *Quaternary International*, doi: 10.1016/j.quaint.2011.08.037.
- Cabrera, A. 1929. Una revision de los mastodontes Argentinos. *Revista del Museo de la Plata*, 32: 61–144.
- Cozzuol, M.A., Mothé, D. & Avilla, L.S. 2011. A critical appraisal of the phylogenetic proposals for the South American Gomphotheriidae (Mammalia: Proboscidea). *Quaternary International*, doi: 10.1016/j.quaint.2011.01.038
- Ferretti, M.P. 2010. Anatomy of *Haplomastodon chimborazi* (Mammalia, Proboscidea) from the late Pleistocene of Ecuador and its bearing on the phylogeny and systematics of South American gomphotheres. *Geodiversitas*, 32: 663–721.
- Lucas, S.G. & Alvarado, G.E. 2010. Fossil Proboscidea from the upper Cenozoic of Central America: Taxonomy, evolutionary and paleobiogeographic significance. *Revista Geológica de América Central*, 42: 9–42.
- Lucas, S.G., Aguilar, R.H. & Spielmann J.A. 2011. *Stegomastodon* from the Pliocene of Jalisco, Mexico. *Bulletin / New Mexico Museum of Natural History and Science*, 53: 517–553.
- Mothé, D., Avilla, L.S., Cozzuol, M. & Winck, G.R. 2011. Taxonomic revision of the Quaternary gomphotheres (Mammalia: Proboscidea: Gomphotheriidae) from the South American lowlands. *Quaternary International*, doi: 10.1016/j.quaint.2011.05.018.

OPINION 2290 (Case 3523)

***Callidea lateralis* Guérin-Méneville, 1838 (currently *Lamprocoris lateralis*; Insecta, Heteroptera): specific name conserved**

Abstract. The Commission has conserved the specific name *Lamprocoris lateralis* (Guérin-Méneville, 1838) for a species of jewel bug from Java by suppressing its objective senior synonym *Lamprocoris obtusus* (Westwood, 1837).

Keywords. Nomenclature; taxonomy; Heteroptera; *Lamprocoris*; *Lamprocoris lateralis*; *Lamprocoris obtusus*; jewel bug; Java.

Ruling

- (1) Under the plenary power it is hereby ruled that the specific name *obtusa* Westwood, 1837, as published in the binomen *Callidea obtusa*, is suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *Lamprocoris* Stål, 1865 (gender: masculine), type species by subsequent monotypy by Stål (1866) *Scutellera lateralis* Guérin-Méneville, 1838 is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *lateralis* Guérin-Méneville, 1838, as published in the binomen *Scutellera lateralis*, specific name of the type species of *Lamprocoris* Stål, 1865, is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *obtusa* Westwood, 1837, as published in the binomen *Callidea obtusa* and as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3523

An application to conserve the specific name *Lamprocoris lateralis* (Guérin-Méneville, 1838) for a species of jewel bug from Java by suppressing its objective senior synonym *Lamprocoris obtusus* (Westwood, 1837) was received from Dávid Rédei (*Hungarian Natural History Museum, Budapest, Hungary*) and Jing-Fu Tsai (*National Chung Hsing University, Taichung, Taiwan*) on 19 April 2010. After correspondence the case was published in BZN 67: 213–217 (September 2010). The title, abstract and keywords of the case were published on the Commission's website. Comments in support were published in BZN 67: 314 (December 2010); 68: 71 (March 2011).

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 215. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 16: Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kottelat, Krell, Minelli, Pape, Papp, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 6. Alonso-Zarazaga, Kojima, Kullander, Lamas, Patterson and Rosenberg.

Bogutskaya and Zhang abstained. Fautin, Lim, Ng and Pyle were on leave of absence.

Voting FOR, Brothers said that although the authors mistakenly considered that the provisions of Article 23.9.1.2 were not fulfilled, and the case was therefore not strictly necessary, he saw that resolution of the problem was facilitated by a vote FOR, eliminating the need for a further publication on the matter. Subsequent to voting, Brothers agreed with Grygier and Rosenberg that the case was necessary. Also voting FOR, Grygier said it would have been helpful to state in detail what the type lot of *Callidea obtusa* consisted of, besides the lectotype. He felt that the authors of the Case were mistaken in their analysis of the question of automatic reversal of precedence, not only about the supposed non-applicability of Article 23.9.1.2, but also in neglecting Article 23.9.1.1. Since Distant (1900), Schouteden (1904) and Kirkaldy (1909) included the name in lists and catalogues after 1899, presumably as valid since there was no comment to the contrary, automatic reversal of precedence could not be claimed and a decision by the Commission using the plenary power was required. Krell, voting FOR, said that since the use of *L. lateralis* documented in paragraph 7 justified ‘automatic’ conservation of this name under Article 23.9.2., the case was unnecessary. Whatever the results of a vote were, the nomenclatural result would be the same: prevailing usage of *L. lateralis* must be maintained.

Voting AGAINST, Alonso-Zarazaga took issue with the title, which he said should have started: ‘*Scutellera lateralis*. . .’ and he added that the species *S. lateralis* could be conserved under Article 23.9.2. Voting AGAINST, Rosenberg said that there was no need for this case, but subsequent to voting Rosenberg confirmed that Grygier’s comment was correct and agreed that the case was necessary. Article 23.9.1.2 did not require the names be cited over the full fifty-year span, but only over at least a ten-year span, so the 12 years cited were sufficient. Also voting AGAINST, Kojima said that this case, if it were approved, could result in additional nomenclatural confusion. The authors of this proposal, in Tsai & Rédei (2010), designated a lectotype for *Callidea obtusa* Westwood, 1837 and designated this lectotype as the neotype of *Scutellera lateralis* Guérin-Méneville, 1838, thus making the latter an objective junior synonym of the former. However, if someone were to find a syntype of *S. lateralis* and if it belonged to a different species from that of the neotype, this proposal might be revealed to have been based on poor taxonomic practice. In a subsequent Commission discussion of this point, Brothers said that while Kojima’s observation provided a useful cautionary comment, provision should not be made in Opinions for hypothetical circumstances beyond those provided in the Case. Should the circumstances arise, then they would need to be resolved through a further approach to the Commission. Grygier pointed out that in Cases where the Commission designates a neotype or a new type species in an Opinion, the proposals will request that previous type designations for the taxon in question be set aside. However in the present instance, the authors of the Case had already named a neotype, so the Commission was not asked to designate any type anew, and the occasion to set aside previous type designations did not arise.

Bogutskaya ABSTAINED, explaining that both conditions of 23.9.1 are met, thus she felt there was no need for the Case.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- Lamprocoris* Stål, 1865, *Hemiptera Africana*. Vol. 1. iv, Norstedtiana, Holmiae, p. 22.
- lateralis*, *Scutellera*, Guérin-Méneville, 1838, *Voyage autour du Monde, exécuté par ordre du Roi, sur la Corvette de sa Majesté, la Coquille, pendant 1822–1825, ... I* (Zoologie), 2(2) (Crustacés et Insectes). Paris. pp. 159, 160.
- obtusa*, *Callidea*, Westwood, 1837, in Hope, F.W. *A catalogue of Hemiptera in the collection of the Rev. F.W. Hope, M.A., with short Latin diagnoses of the new species*. Bridgewater, London, p. 16.

OPINION 2291 (Case 3524)

***Thecla dumetorum* Boisduval, 1852 (currently *Callophrys dumetorum*), proposed neotype; and *Thecla sheridonii* Carpenter, 1877 (currently *C. sheridanii*) (Lepidoptera, LYCAENIDAE): current usage and names conserved**

Abstract. The Commission has conserved the specific name *Callophrys dumetorum* by designation of a neotype and the widely used name *C. sheridanii* has been given precedence over *C. viridis* whenever the two are considered synonyms. This is intended to eliminate nomenclatural confusion within the butterfly genus *Callophrys* Billber, 1820 resulting from differing identifications of the lectotype of *Callophrys dumetorum* which have changed the usages of *C. dumetorum*, *C. viridis* Edwards, 1862 and *C. perplexa* Barnes & Benjamin, 1923.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; LYCAENIDAE; *Thecla*; *Callophrys*; *Callophrys dumetorum*; *Callophrys perplexa*; *Thecla sheridonii*; *Callophrys sheridanii*; *Callophrys viridis*; green hairstreaks; California.

Ruling

- (1) Under the plenary power it is hereby ruled that:
 - (a) all previous type fixations for *dumetorum* Boisduval, 1852, as published in the binomen *Thecla dumetorum*, are hereby set aside and a male from Brannan Island, Sacramento Co. California, that bears three labels: ‘Brannan Is.[Island] State Park, Sacramento Co. Calif., 2-iv[April]-[19]70’ (hand-printed) with a rubber-stamped black-ink printed ‘SCOTT’ on reverse; ‘collected by James A. Scott’ (printed); ‘NEOTYPE *Thecla dumetorum*, designated by James Scott et al. March 2010’ (hand-printed in red ink), is designated as the neotype to be deposited in the Natural History Museum, London;
 - (b) the name *sheridanii* Carpenter, 1877, as published in the binomen *Thecla sheridonii*, is to be given precedence over the name *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *dumetorum* Boisduval, 1852, as published in the binomen *Thecla dumetorum* and as defined by the neotype male from Brannan Island, Sacramento Co. California to be deposited in the Natural History Museum, London, as ruled in (1)(a) above;
 - (b) *sheridanii* Carpenter, 1877, as published in the binomen *Thecla sheridonii*, with the endorsement that it is to be given precedence over the name *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, whenever the two are considered to be synonyms.
- (3) The entry for *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, in the Official List of Specific Names in Zoology is hereby emended to record

that it is not to be given priority over the name *sheridanii* Carpenter, 1877, as published in the binomen *Thecla sheridonii*, whenever the two are considered to be synonyms.

History of Case 3524

An application to conserve the usage of the specific name *Callophrys dumetorum* by designation of a neotype and to conserve the widely used name *C. sheridanii* by giving it precedence over *C. viridis* whenever the two are considered to be synonyms was received from James A. Scott (*Lakewood, CO, U.S.A.*), Crispin S. Guppy (*Quesnel, BC, Canada*), Jonathan P. Pelham (*Burke Museum of Natural History and Culture, University of Washington, Seattle, WA, U.S.A.*), John V. Calhoun (*Florida Museum of Natural History, University of Florida, Gainesville, FL, U.S.A.*), Kenneth E. Davenport (*Bakersfield, CA, U.S.A.*), Michael S. Fisher (*Centennial, CO, U.S.A.*), Michael E. Toliver (*Eureka College, Eureka, IL, U.S.A.*) on 12 May 2010. After correspondence the case was published in BZN 67: 225–237 (September 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

The authority for the binomen *Thecla sheridonii* was referred to as Edwards, 1877, Edwards in Carpenter, 1877 in the original application. However, the published paper does not indicate Edwards as the author of the description, only as the determiner of the identifications on the list of known species, thus the reference is corrected in this Opinion to *sheridanii* Carpenter, 1877, as published in the binomen *Thecla sheridonii* (with the spelling corrected as explained in the Case).

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 234. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 19: Ballerio, Brothers, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 3. Alonso-Zarazaga, Bogutskaya and Štys.

van Tol split his vote, voting FOR: (1)(a), (2)(a) and AGAINST (1)(b), (2)(b) and (3).

Bouchet abstained. Fautin, Lim, Ng and Pyle were on leave of absence.

Voting FOR, Harvey expressed disappointment that the authors had decided to lodge the neotype of *Thecla dumetorum* in the Natural History Museum, London. Whilst the repository of name-bearing types is not governed by the Code, he was surprised that the authors had not chosen to lodge the neotype in a North American institution, providing easier access for local workers. Voting FOR, Pape said he was puzzled by the absence of an opportunity to provide a split vote as there were two issues in that Case, one being whether or not to designate a neotype for *T. dumetorum*, the other being whether or not to give reversed precedence to the names *T. sheridanii* and *T. viridis*. Technically, one might favour one but not the other. As Pape was FOR both of these proposals, his final vote was FOR, but he felt it would

have been a better formulation to separate the issues. Also voting FOR, Yanega said that while the taxonomic history in this case was extremely complicated, it did appear to come down to whether or not the lectotype of *dumetorum* was unambiguously assignable to the taxon as it was, or had been, understood. The authors made a compelling case that it was not, and while no solution would satisfy all concerned parties, the designation of a neotype offered a more stable solution than the status quo.

Voting AGAINST, Alonso-Zarazaga said it seemed to him that the species and subspecies dealt with are known only to a limited group of specialists and are of no special interest for the laypersons, so in his opinion, stability was better achieved by the use of priority in every point discussed in the application. Also voting AGAINST Štys said he believed that Opinions of the Commission should not be issued in cases where the taxonomy of the species-group concerned was controversial and unsettled. He felt that if the authors had explained unambiguously which taxa they recognized, it would allow the Commission to consider the mandatory type identities and apply the provisions of the Code to the names involved.

Bouchet ABSTAINED, saying he sympathized with the intent of the application, but he regretted that the occasion was not taken to select specimens with associated molecular data as neotypes. He felt it was a lost opportunity to conduct nomenclature in a 21st century taxonomic context.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

dumetorum, *Thecla*, Boisduval, 1852, *Annales de la Société Entomologique de France*, (2)10(2): 291.

sheridanii, *Thecla*, Carpenter, 1877, *Field and Forest*, 3(3): 48.

viridis, *Thecla*, Edwards, 1862, *Proceedings of the Academy of Natural Sciences of Philadelphia*, 14(5): 221, 223.

OPINION 2292 (Case 3521)

***Megaselia abdita* Schmitz, 1959 (Diptera, PHORIDAE): precedence given over *Aphiochaeta griseipennis* Santos Abreu, 1921 (currently *Megaselia griseipennis*)**

Abstract. The Commission has conserved the specific name *Megaselia abdita* Schmitz, 1959 for a widespread Holarctic scuttle fly by suppressing its senior subjective synonym *Megaselia griseipennis* (Santos Abreu, 1921).

Keywords. Nomenclature; taxonomy; Diptera; PHORIDAE; *Megaselia*; *Megaselia abdita*; scuttle fly; Holarctic.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, is to be given precedence over the name *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, with the endorsement that it is to be given precedence over the name *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, whenever the two are considered to be synonyms;
 - (b) *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, with the endorsement that it is not to be given priority over the name *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, whenever the two are considered to be synonyms.

History of Case 3521

An application to conserve the specific name *Megaselia abdita* Schmitz, 1959 for a widespread Holarctic scuttle fly by suppressing its senior subjective synonym *Megaselia griseipennis* (Santos Abreu, 1921) was received from R. Henry L. Disney, Michael Akam, Pat Simpson (*University of Cambridge, Cambridge, U.K.*), and Urs Schmidt-Ott (*The University of Chicago, Chicago, IL, U.S.A.*) on 15 March 2010. After correspondence the case was published in BZN 67: 238–242 (September 2010). The title, abstract and keywords of the case were published on the Commission's website. One Comment in support was published in BZN 67: 314 (December 2010).

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 240. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 16: Ballerio, Brothers, Halliday, Harvey, Kottelat, Krell, Lamas, Minelli, Pape, Papp, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 7. Alonso-Zarazaga, Bogutskaya, Grygier, Kojima, Kullander, Patterson and van Tol.

Bouchet abstained. Fautin, Lim, Ng and Pyle were on leave of absence.

Voting FOR, Štys said that for insect genera that are extremely speciose and ecologically diversified, but taxonomically poorly known, we should expect many taxonomic changes reflected by corresponding and sometimes unwelcome changes in nomenclature. *Megaselia* was an excellent, but not the only, example of this. Nevertheless, Štys agreed that the case for conservation of the species group name *Megaselia abdita* was strong because of the importance of this species in developmental biology and forensic entomology. However, he said he could not endorse two lines of the authors' argument: (1) Their assertion that 'editors of journals tend to favour the use of the names in the most recent checklists and catalogues'. Štys felt it exceedingly unlikely that editors, who were generally overworked, would check an insect name after the referees had done their jobs, nor would they be likely to have the necessary literature available. Furthermore, Štys asked, why should the editorial practice have any bearing on nomenclature; (2) Unpublished taxonomic evidence should not be introduced in nomenclatural arguments, particularly if it is incomprehensible to a non-specialist. As an example, he asked which of the Commissioners could be expected to know what such characters as 'SPS vesicles of the postpedicels' and 'Dufour's crop mechanism' meant, and what their diagnostic significance was in the PHORIDAE.

Voting AGAINST, Alonso-Zarazaga explained that he felt that this was another case in which the nullification of systematic work and descriptions of zoologists working in countries not considered to be More Economically Developed Countries (MEDC) was requested because the same species described later by a zoologist in a MEDC received much more publicity and use. He felt it was particularly egregious, as Schmitz (1959) described his species without even attempting to remount the single specimen of *M. griseipennis* he examined. Alonso-Zarazaga felt that since both species had been used in the 20th century, the only fair decision was to vote for the application of priority. Also voting AGAINST, Grygier said that the point of the proposals advanced here appeared to be to avoid adverse effects on forensic entomologists and certain developmental geneticists associated with co-applicant Dr Schmidt-Ott. But only 16 years or so had passed since this fly was first used in either field, so it should still be possible to encourage the use of the valid species name in both of these fields as well as phorid taxonomy per se. Also voting AGAINST, Kojima thought that this proposal was based on the designation of the lectotype of *griseipennis* Santos Abreu, 1921 and a taxonomic decision (synonymy of *Aphiochaeta griseipennis* with *Megaselia abdita* Schmitz, 1959) made by one of the authors of this proposal, both of which were published only in this proposal. However, the background and reasoning for this synonymy or this taxonomic decision had never been published. In other words, the authors seemed to be asking the Commission for approval of the proposal as a prerequisite for publishing the synonymy which might or might not be accepted by taxonomic societies; the proposal should have been made only after the synonymy of *Megaselia abdita* Schmitz, 1959 with *Aphiochaeta griseipennis* Santos Abreu, 1921 was formally published.

Bouchet ABSTAINED, saying that he sympathized with the intent of the application, but viewed conditional reversal of precedence as a source of nomenclatural instability. He therefore rejected the technical solution proposed. The name *Aphiochaeta griseipennis* Santos-Abreu, 1921, should, in his opinion, have been placed on the Official Index.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

abdit, *Megaselia*, Schmitz, 1959, *Broteria*, **55**: 123.

griseipennis, *Aphiochaeta*, Santos-Abreu, 1921, *Memorias de la Real Academia de Ciencias y Artes de Barcelona*, **17**(1): 57.

OPINION 2293 (Case 3482)

***Psittacus tenuirostris* Kuhl, 1820 and *Licmetis pastinator* Gould, 1841 (currently *Cacatua tenuirostris* and *Cacatua pastinator*; Aves, Psittaciformes): usage conserved by designation of a neotype for *Psittacus tenuirostris* Kuhl, 1820**

Abstract. The Commission has conserved the names *Psittacus tenuirostris* Kuhl, 1820 and *Licmetis pastinator* Gould, 1841 (currently *Cacatua tenuirostris* and *Cacatua pastinator*; Aves, Psittaciformes) by designation of a neotype.

Keywords. Nomenclature; taxonomy; Aves, CACATUIDAE; *Cacatua tenuirostris*; *Cacatua pastinator*; cockatoos; long-billed corella; Australia.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for *Psittacus tenuirostris* Kuhl, 1820 are hereby set aside and specimen ANWC 37645 lodged in the Australian National Wildlife Collection, CSIRO, Canberra, Australia is designated as the neotype.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *tenuirostris* Kuhl, 1820, as published in the binomen *Psittacus tenuirostris* and as defined by the neotype designated in (1) above;
 - (b) *pastinator* Gould, 1841, as published in the binomen *Licmetis pastinator* and as defined by the neotype WAM A18537 lodged in the Western Australian Museum.

History of Case 3482

An application to conserve the species-group names *Psittacus tenuirostris* Kuhl, 1820 and *Licmetis pastinator* Gould, 1841 (currently the southeastern and southwestern species of Australian long-billed corellas *Cacatua tenuirostris* and *Cacatua pastinator*; Aves, Psittaciformes) by designation of a neotype was received from Richard Schodde (*Australian Biological Resources Study, Canberra, Australia*), Claire Voisin and Jean-François Voisin (*Muséum national d'Histoire naturelle, Paris, France*) on 23 August 2008. After correspondence the case was published in BZN 67(2): 151–157 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 155–156. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 22: Alonso-Zarazaga, Ballerio, Brothers, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Bogutskaya and Bouchet abstained.

Fautin, Lim, Ng and Pyle were on leave of absence.

ABSTAINING, Bogutskaya said that she felt the text of the application was not clear enough to judge the problem with full consideration. She noted that there was a third subspecies, the northwestern corella, which was actually the third species-group name involved and which was not even named in the application. She noted that it could be seen from the literature that there was some confusion with the name of this third species – two names were used by different authors: *C. pastinator derbyi* and *C. pastinator butleri*. Bouchet also ABSTAINED, commenting that he sympathized with the intent of the application, but he regretted that the opportunity was not taken to select specimens with associated molecular data as neotypes. He felt this was a lost chance to conduct nomenclature in a 21st century taxonomy context.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

pastinator, *Licmetis*, Gould, 1841, *Proceedings of the Zoological Society of London*, **1840**: 175.
tenuirostris, *Psittacus*, Kuhl, 1820, *Nova Acta Physico-medica Academiae Caesareae Leopoldino-Carolinae*, **10**: 88.

OPINION 2294 (Case 3500)***Paradisaea* Linnaeus, 1758 and PARADISAEIDAE Swainson, 1825 (Aves): names conserved**

Abstract. The Commission has conserved the generic name *Paradisaea* Linnaeus, 1758 and the family-group name PARADISAEIDAE Swainson, 1825 for the birds of paradise by suppression of the competing spellings *Paradisea* Linnaeus, 1758 and PARADISEIDAE Swainson, 1825. The spellings *Paradisaea* and PARADISAEIDAE have been in prevailing use for over 90 years.

Keywords. Nomenclature; taxonomy; Aves, PARADISAEIDAE; *Paradisaea*; *Paradisea*; birds of paradise; Australasia; New Guinea.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous First Reviser Acts affecting the spellings *Paradisea* Linnaeus, 1758 and *Paradisaea* Linnaeus, 1758, are hereby suppressed and that *Paradisaea* Linnaeus, 1758 is the correct original spelling of the name.
- (2) The name *Paradisaea* Linnaeus, 1758 (gender: feminine), type species *apoda* Linnaeus, 1758 by subsequent designation of G.R. Gray (1840), ruled in (1) above to be the correct original spelling, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *apoda* Linnaeus, 1758, as published in the binomen *Paradisaea apoda* (specific name of the type species of *Paradisaea* Linnaeus, 1758) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name PARADISAEIDAE Swainson, 1825, type genus *Paradisaea* Linnaeus, 1758, is hereby placed on the Official List of Family-Group Names in Zoology.
- (5) The name *Paradisea* Linnaeus, 1758, ruled in (1) above to be an incorrect original spelling, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.
- (6) The name PARADISEIDAE Swainson, 1825, an incorrect spelling of PARADISAEIDAE Swainson, 1825, is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3500

An application to conserve the generic name *Paradisaea* Linnaeus, 1758 and the family name PARADISAEIDAE Swainson, 1825 for the birds of paradise was received from Richard Schodde (*Australian Biological Resources Study, Canberra, Australia*), Mary LeCroy (*American Museum of Natural History, New York, NY, U.S.A.*) and Walter J. Bock (*Columbia University, New York, NY, U.S.A.*) on 2 August 2009. After correspondence the case was published in BZN 67: 57–63 (March 2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 59. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 23: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kottelat split his vote: FOR proposal (1)-(4), AGAINST proposals (5)-(6)

Fautin, Lim, Ng and Pyle were on leave of absence.

Kottelat explained that he voted AGAINST proposals (5) and (6) because the Indexes of Rejected Names were for names, as their titles indicated. Here, the ‘names’ proposed for placing on the indexes were not names but incorrect spellings of names placed on the Official Lists. A name could not be at the same time on a List and on an Index.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

apoda, *Paradisaea*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 110.

Paradisaea Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 110.

PARADISAEIDAE Swainson, 1825, *The Zoological Journal*, 1: 480.

Paradisea Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 83.

PARADISEIDAE Swainson, 1825, *The Zoological Journal*, 1: 479.

OPINION 2295 (Case 3515)***Rhynchotherium* Falconer, 1868 (Mammalia; Proboscidea): usage conserved by designation of *Rhynchotherium falconeri* Osborn, 1923 as the type species**

Abstract. The Commission has conserved the generic name *Rhynchotherium* Falconer, 1868, applied to proboscidean fossils from North America, by designating *Rhynchotherium falconeri* Osborn, 1923 as the type species.

Keywords. Nomenclature; taxonomy; Mammalia; Proboscidea; North America; Mexico; *Rhynchotherium*; *Gomphotherium*; *Rhynchotherium falconeri*.

Ruling

- (1) Under the plenary power it is hereby ruled that all fixations of type species for *Rhynchotherium* Falconer, 1868 are set aside and *Rhynchotherium falconeri* Osborn, 1923 is designated as the type species.
- (2) The name *Rhynchotherium* Falconer, 1868 (gender: masculine), type species *Rhynchotherium falconeri* Osborn, 1923, as ruled in (1) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *falconeri* Osborn, 1923 as published in the binomen *Rhynchotherium falconeri*, specific name of the type species of *Rhynchotherium* Falconer, 1868 as ruled in (1) above, is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3515

An application to conserve the generic name *Rhynchotherium* Falconer, 1868, applied to proboscidean fossils from North America, by designating *Rhynchotherium falconeri* Osborn, 1923 as the type species was received from Spencer G. Lucas (*New Mexico Museum of Natural History, Albuquerque, NM 87104, U.S.A.*) on 17 February 2010. After correspondence the case was published in BZN 67: 158–162 (June 2010). The title, abstract and keywords of the case were published on the Commission's website. Comments in support were published in 67: 256–257 (September 2010); 68: 78–79 (March 2011).

Decision of the Commission

On 1 September 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 160–161. At the close of the voting period on 1 December 2011 the votes were as follows:

Affirmative votes – 21: Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3. Alonso-Zarazaga, Bogutskaya and Kojima.

Fautin, Lim, Ng and Pyle were on leave of absence.

Voting AGAINST, Alonso-Zarazaga explained that he considered the Principle of Priority to be the most important in the Code, since it was an objective principle. He said that the authors of this application proposed a new type species for the genus *Rhynchotherium* to save it from becoming a junior synonym of *Gomphotherium*, in a subjective action of selection of a new type species. Alonso-Zarazaga then suggested that this was not the end of the problem, as Alberdi et al. (BZN 68(1): 79) had said: ‘... and certainly we do agree that in the first instance it could be *R. falconeri*. However, this would not rule out further studies of the group in order to determine a type species that better represents the main features of this taxon.’. Alonso-Zarazaga was concerned that this could result in a new application to request the designation of a new type species. He felt that the time of *Rhynchotherium* had passed under the rules of the Code since it was synonymized with *Gomphotherium* by May (1981). He pointed out that many other ostensibly cherished names had disappeared from use in zoology by even-handed application of rules. He thought it unfortunate that May’s decision had not been followed, as he thought it was correct. He felt that the only objective and sound basis for stabilizing names that had been used 100 times in 141 years was priority. In his view, 30 years had been lost for stabilizing the name of this animal. Also voting AGAINST, Kojima said that the author of this proposal had referred to only *tlascalae* and *falconeri*, but did not state which species were included in the genus *Rhynchotherium* in his opinion.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

falconeri, *Rhynchotherium*, Osborn, 1923, *American Museum Novitates*, **99**: 3.

Rhynchotherium Falconer, 1868, *Palaeontological memoirs of the late Hugh Falconer...with a biographical sketch of the author*, vol. 2. p. 74.

Book Review

Priority! The Dating of Scientific Names in Ornithology. A Directory to the Literature and its Reviewers. Compiled by Edward C. Dickinson, Leslie K. Overstreet, Robert J. Dowsett and Murray D. Bruce 320 pp. + CD ROM with over 160 pp of tables. 28 greyscale illustrations. Aves Press. 2011. ISBN 978-0-9568611-1-5.

M.V.L. Barclay, *Department of Entomology, Natural History Museum, London SW7 5BD* (e-mail: m.barclay@nhm.ac.uk)

Before I review an ostensibly ornithological work, I should confess to being an entomologist, working on beetles; however this is a work that extends well beyond the one field, following in the tradition of the great archivist Charles Davies Sherborn (on the 150th anniversary of whose birth it was published). I expect I was asked to review it because I am known to have frequently expressed a belief in the importance of the International Code of Zoological Nomenclature, a belief that is also a guiding principle of this book; I also note that two other entomologists, Neal Evenhuis and Pat Bouchard, have also reviewed it and their quotes appear on the back cover. There are of course profound differences between birds and beetles, in terms of the relationship between the group and its taxonomic community. Beetles, with the exception of certain families, have suffered from insufficient descriptive attention. Even though an estimated 400,000 species have been formally named, most appear to have been named only once, and thousands more, no doubt, have no name at all. Birds tell a different story- their popularity has made them one of the best known of all animal groups, but has also led to a shocking amount of 'over description'. The introduction to '*Priority!*' explains that the 9723 bird species share an astonishing 100,000+ species group names. Even though these include 26,400 accepted subspecies (whatever those are worth) that still leaves multiple names per valid taxon. Add to this some 10,000 generic group names (yes, more than the number of valid species!) and the importance of determining priority in ornithology becomes very apparent. While many would define priority as an objective way of selecting between synonyms, it is interesting that this book's abstract discusses it in terms of identifying the 'winners'. That concept really brings home the competitive nature of vertebrate taxonomy, which has been, and in some vertebrate groups still is, the cause of much of the kind of problem the book seeks to address. The race to be the first into print has, historically, led to synonymy and homonymy through inadequate checking of previous literature, and to 'quick and dirty' publication, even new birds described in *The Daily Mail* and *American Exchange and Mart*. If all of this were not bad enough, the introduction discusses that many ornithologists regard dates for names to be of 'trivial importance' (and indeed one often sees published lists of bird names that omit not just the date but sometimes even the author); others rely on vernacular names, even though these lack the universality and stability of scientific names. It is no coincidence that Edward Dickinson, the book's first author, is also the managing editor of the '*Howard and Moore Complete Checklist of Birds of the World*', and no doubt many of the problems that '*Priority!*' deals with came to light during the preparation of the 2003 edition of that work.

The authors of 'Priority!' estimate that of all the publications featuring avian nomenclatural acts, some 4–6% present dating difficulties. The purpose of the book is to clarify the dating of those problematic publications and to provide a new and unambiguous source of reference for those dates to prevent future confusion. It is the kind of nomenclatural spadework that underpins taxonomy and most of the other biological sciences, but which is too often taken for granted. The product of several years of dedicated scholarship by a very skilled team including ornithologists and librarians, it has drawn on the assistance of a huge list of scientists, archivists, bibliographers and institutions, and represents a major step towards cleaning up many of the problems of dating avian names, and hence, as the title suggests, discovering which of the plethora of synonyms should be used. The first 60 pages, dealing with the Code (discussing and elucidating specific articles), and with the historical background of printing and publishing, and how to date publications, are of considerable general interest to all zoologists. These are followed by almost 200 pages of alphabetical lists of problematic publications, with discussion of, and in many cases solutions to, the associated problems. It has an extensive reference list, a good glossary, and a number of indices, as well as a CD ROM containing over 160 pages of searchable tables of supplementary data.

Many of the problematic publications resolved here also deal with taxonomic groups other than birds, increasing the book's breadth of usefulness. The authors also mention that its preparation resulted in 27 related publications, and several of the contributors have launched a new journal 'Zoological Bibliography' that deals with the same subject. I feel that, with the modern information tools and bibliographic and archival sources, now is the time to be cleaning up the nomenclatural messes of the past, and the entire zoological community, whether they know it or not, owes a debt of gratitude to those who are doing it. I think that this book belongs on the shelf of anyone with an interest in nomenclature or historical bibliography.

Corrigendum

In a recent comment by Morris and Barclay (BZN 68: 292) a third author was erroneously included. His contribution was in fact a separate comment on the same subject, which is given on p. 293 of BZN 68. His inclusion on the earlier comment was the result of a printer's error. The correct citation of the comment is: 'Morris, M.G. and Barclay, M.V.L. Comment on the proposed precedence of *Maculinea* van Eecke, 1915 over *Phengaris* Doherty, 1891 (Lepidoptera, LYCAENIDAE) (Case 3508) 1. BZN 68: 292–293'.

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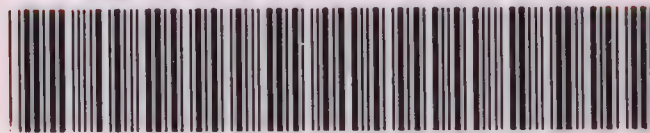
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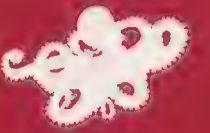
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The Executive Secretary

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Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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Cover image: *Paradisaea rubra* Daudin, 1800, red bird-of-paradise, an endemic, near-threatened species from the north-west Papuan Islands of Waigeo, Batanta, Gemien and Saonek. The detail is from Plate 31 of John Gould's '*Birds of New Guinea*,' vol. 1 (1875–1888). (The original image is a colour lithograph © Natural History Museum, London). The inscription on the image says '*Paradisaea sanguinea* Shaw'. The name *Paradisaea sanguinea* Shaw, 1809 is a junior synonym of *Paradisaea rubra* Daudin, 1800. Note the correct spelling of the name *Paradisaea*, ruled upon by the Commission (the Opinion is published in BZN 69(1)).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

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Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

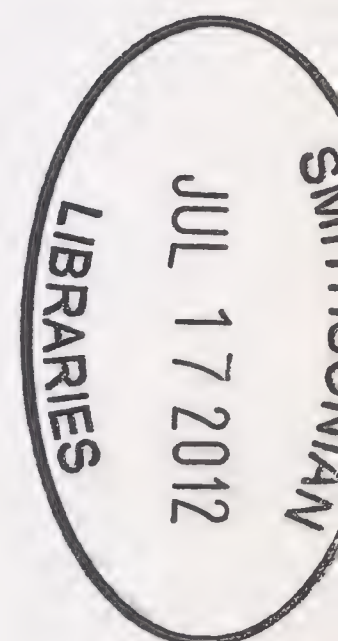
New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 69, part 1, 31 March 2012) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3584: *Erythemis* Hagen, 1861: proposed conservation over *Lepthemis* Hagen, 1861 (Insecta, Odonata). Â.P. Pinto, R. Garrison, D. Paulson, T.W. Donnelly.

CASE 3585: *Atomosia* Macquart, 1838 (Insecta, Diptera, ASILIDAE): proposed conservation of usage. N.L. Evenhuis.

CASE 3586: *Glossina* Wiedemann, 1830 (Insecta, Diptera, GLOSSINIDAE): proposed precedence over *Nemorhina* Robineau-Desvoidy, 1830. N.L. Evenhuis & T. Pape.



CASE 3587: *Podocnemis unifilis* Troschel in Schomburgk, 1848 (Reptilia, Testudines): proposed precedence over *Emys cayennensis* Schweigger, 1812. R.C. Vogt, S.A. Thomson, A.G.J. Rhodin, P.C.H. Pritchard, R. Mittermeier & N. Baggi.

CASE 3588: *Brachystoma* Meigen, 1822 (Insecta, Diptera, BRACHYSTOMATIDAE): proposed conservation of usage. N.L. Evenhuis & B.J. Sinclair.

CASE 3589: *Hemerodromia* Meigen, 1822 and HEMERODROMIINAE Schiner, 1862 (Insecta, Diptera, EMPIDIDAE): proposed conservation of usage of the genus-group and family-group names. N.L. Evenhuis & A.R. Plant.

CASE 3590: *Scarabaeus* Linnaeus, 1758, *Dynastes* MacLeay, 1819, SCARABAEINAE Latreille, 1802, and DYNASTINAE MacLeay, 1819 (Coleoptera: SCARABAEOIDEA): proposed conservation of usage. F.-T. Krell, T. Branco & S. Ziani.

CASE 3591: *Argyra* Macquart, 1834 (Insecta, Diptera, DOLICHOPODIDAE): proposed conservation of the name by suppression of *Porphyrops* Meigen, 1824. N.L. Evenhuis, D.J. Bickel & H. Robinson.

CASE 3592: *Dodecatoma* Westwood, 1849 (Insecta, Coleoptera): proposed conservation by suppression of *Dodecatoma* Dufour, 1841 (Insecta, Plecoptera). P.J. Johnson, R.E. DeWalt & N.L. Evenhuis.

CASE 3593: *Attus splendens* Rainbow, 1896 (Arachnida, Araneae, SALTICIDAE): proposed conservation of the specific name. D.E. Hill & J.C. Otto.

CASE 3594: *Ecdyonurus* Eaton, 1868 and *Ephemera venosa* Fabricius, 1775 (currently *Ecdyonurus venosus*; Insecta, Ephemeroptera): proposed conservation of usage by designation of a neotype. E. Bauernfeind & A. Haybach.

CASE 3595: *Ocydromia* Meigen, 1820 (Insecta, Diptera, HYBOTIDAE): proposed conservation of usage. N.L. Evenhuis & B.J. Sinclair.

CASE 3596: *Eusparassus* Simon, 1903 (Araneae: SPARASSIDAE): proposed conservation of generic name. M. Moradmand & P. Jäger.

Case 3581***Turbo bidens* Linnaeus, 1758 (Gastropoda, CLAUSILIIDAE): request for setting aside the neotype**

Francisco W. Welter-Schultes

Zoologisches Institut, Berliner Strasse 28, 37073 Göttingen, Germany
(e-mail: fwelter@gwdg.de)

Abstract. The purpose of this application, under Articles 75.6 and 81 of the Code, is to conserve two specific gastropod names *Turbo bidens* Linnaeus, 1758 (currently *Papillifera bidens*) and *Clausilia incisa* Küster, 1876 (currently *Cochlodina incisa*), by setting aside the neotype designated by Kadolsky (2009) and by fixing the neotype of *Helix papillaris* Müller, 1774 as neotype for *Turbo bidens*. This request is in line with Opinion 2176, in which *Helix papillaris* was regarded as a junior synonym of *Turbo bidens*.

Keywords. Nomenclature; taxonomy; Gastropoda; CLAUSILIIDAE; *Cochlodina incisa*; *Papillifera bidens*; stylommatophoran pulmonate snails; Europe.

1. Linnaeus (1758, p. 767) established *Turbo bidens* with a description and a bibliographical reference to a figure of a specimen collected in Italy near Florence (Gualtieri, 1742, Tab. 4, Fig. C) that did not match the description. Linnaeus (1767, p. 1240) repeated the information in the same form and added a reference to another figure which did match the description (Bonanno, 1684, Cl. 3, Fig. 41). The contradiction was discovered a few years later by Schröter (1784) who observed that Gualtieri (1742) had indeed given a figure of the species that matched the Linnean description, but that it was not Fig. C but Fig. E of the same plate. Schröter (1784) was the first to assume that Linnaeus (1758) had made a mistake and cited the incorrect figure.

2. The described species occurs mainly in Italy, where it is one of the most common snails that can be found at almost every limestone outcrop. It is well characterised by its papillated suture and has been dispersed to other coastal regions of the western Mediterranean and the eastern coasts of the Adriatic Sea. Another clausiliid species known as *Cochlodina incisa* (Küster, 1876) occurs near Florence. This species occurs only in peninsular Italy, where it is found in leaf litter and rotting wood. The name *Turbo bidens* had never been used for this species, but it could have been the species of Fig. C figured by Gualtieri (1742, Tab. 4).

3. Müller (1774, p. 120) established the name *Helix papillaris* Müller, 1774 for the species with the papillated suture. Hanley (1855) analysed the Linnean type collection and associated only one specimen with the descriptive term 'sutura subcrenata' used in 1758 for the name *Turbo bidens*; it belonged to the species with the papillated suture, which he classified as conspecific with *Helix papillaris* Müller, 1774. After consulting the Linnean catalogue, Hanley (1855, p. 351) came to the conclusion that Linnaeus possessed this shell and that it should be regarded as 'the type'. This

specimen was later lost, and no other syntypes in the Linnean collection are known (Dance, 1967, p. 21). In the following 110 years *Turbo bidens* was commonly used for this species until Forcart (1965) proposed using *Helix papillaris* for it again. Since then both names have been used, *papillaris* more frequently until around 2002.

4. Giusti & Manganelli (2005) fixed a neotype for *Helix papillaris* (Gualtieri's possible syntypes had been lost) and asked the Commission to suppress the name *Turbo bidens* (Case 3319). The Case was discussed, and the Commission rejected this request in Opinion 2176 (September 2007) stating that *Helix papillaris* 'should not be conserved by the suppression of its senior subjective synonym *Turbo bidens*'. This decision implied that the name *Turbo bidens* should be used for *Helix papillaris*, the identity of which had nowhere been disputed.

5. As the Commission had not fixed a name-bearing type for *T. bidens*, Kadolsky (2009) designated as neotype a specimen of *Cochlodina incisa* which contradicted the implied meaning of Opinion 2176. The intention was to convert the Linnean name into a senior synonym of *Clausilia incisa* Küster, 1876, and to use the Linnean name for this species in the combination *Cochlodina bidens* (Linnaeus, 1758).

6. The selected neotype can be regarded as invalid for various reasons. Since the proposal of suppression of *Turbo bidens* was rejected and the identity of the taxon was nowhere disputed, there was no exceptional need for selecting a neotype (Article 75.3 of the Code). Taxonomic objections to Kadolsky's (2009) arguments were raised by H. Nordsieck (unpublished), who argued that the neotype did not meet the conditions of Article 75.3.5, because it was not in line with the original description ('sutura subcrenata' denoted a papillated suture and no author has ever described any species of *Cochlodina* in such terms). Those who see no reason to doubt Hanley's (1855) report of the presumed syntype of *T. bidens* can argue that the neotype was not in line with what has previously been known about the original types (Article 75.3.5). Kadolsky (2009) implied that the *Turbo bidens* shell found by Hanley (1855) in the Linnean collection might not be an original specimen. Dance (1967) reported serious mismanagement in the Linnean collection years after Hanley's first studies on the types in the 1840s. This would easily explain why the original syntype was later lost.

7. For those who accept the decision taken by the Commission in Opinion 2176 the names of the two species in question should be (a) *Papillifera bidens* (Linnaeus, 1758) and (b) *Cochlodina incisa* (Küster, 1876). For those who accept Kadolsky's (2009) neotype selection the names should be (a) *Papillifera papillaris* (Müller, 1774) and (b) *Cochlodina bidens* (Linnaeus, 1758). This confusing situation is undesirable.

8. In order to bring the 230-year old dispute to an end and to conserve the current usage of *Cochlodina incisa* the best option seems to be to set aside the controversial neotype and to fix a new neotype for *Turbo bidens*. An appropriate candidate specimen is the name-bearing type of *Helix papillaris*. Müller (1774) established *Helix papillaris* and cited, among others, two figures by Gualtieri (1742, Tab. 4, Fig. D and E) from near Firenze, Italy. These specimens are lost, so Giusti & Manganelli (2005, p. 132) designated as neotype a shell collected (13 May 2005) in Firenze by S. Cianfanelli and E. Lori (Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione Zoologica 'La Specola', MZUF 24432). As explained above, all Linnean syntypes of *Turbo bidens* are lost and it has been accepted by Schröter (1784) and numerous subsequent authors that Linnaeus (1758) erroneously cited the wrong figure of this plate and had Gualtieri's (1742) Fig. E in mind. The same figure was

cited by Müller (1774). It therefore makes sense to fix as neotype for *Turbo bidens* the neotype of *Helix papillaris*, specimen MZUF 24432. This would make both names objective synonyms.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens*, and to designate as neotype specimen no. MZUF 24432 deposited in the Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione Zoologica 'La Specola' (figured by Giusti & Manganelli 2005, p. 133);
- (2) to emend the entry on the Official List of Specific Names in Zoology for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens* to record that it is defined by the neotype designated in (1) above.

References

- Bonanno, P.** 1684. *Recreatio mentis, et ocvli in obseruatione animalium testaceorum curiosis naturæ inspectoribus. Italico sermone primùm proposita. Nunc denuò ab eodem Latine oblata, centum additis testaceorum iconibus, circa quæ varia problemata proponuntur.* - pp. [1–15], 1–270, [1–10], pl. [1–15], Fig. (1) 1–20, Fig. (2) 1–100, Fig. (3) 1–407, pl. [1–5]. Varesij, Romæ. <http://resolver.sub.uni-goettingen.de/purl?PPN369108183>
- Dance, S.P.** 1967. Report on the Linnaean shell collection. Proceedings of the Linnean Society of London, **178**: 1–24, Pls. 1–10.
- Forcart, L.** 1965. Rezente Land- und Süßwassermollusken der süditalienischen Landschaften Apulien, Basilicata und Calabrien. *Verhandlungen der Naturforschenden Gesellschaft in Basel*, **78**: 59–184.
- Giusti, F. & Manganelli, G.** 2005. Case 3319. *Helix papillaris* Müller, 1774 (currently *Papillifera papillaris*; Mollusca, Gastropoda): proposed conservation of the specific name. *Bulletin of Zoological Nomenclature*, **62**: 130–133.
- Gualtieri, N.** 1742. *Index testarvm conchyliorvm quæ adservantvr in mvseo Nicolai Gvaltieri (...) et methodice distribvta exhibentvr. Tabvlis CX.* - pp. I–XXIII [= 1–23], I–CX [= 1–110], Tab. I–CX [= 1–110]. Albizzini, Florentinae. <http://resolver.sub.uni-goettingen.de/purl?PPN367583143>
- Hanley, S.** 1855. *Ipsa Linnæi Conchyliæ. The shells of Linnæus, determined from his manuscripts and collection. Also, an exact reprint of the Vermes Testacea of the 'Systema Naturæ' and 'Mantissa'.* - pp. [1], 1–556, [1], Pl. I–V [= 1–5]. Williams & Norgate, London. <http://www.biodiversitylibrary.org/item/44502>
- Kadolsky, D.** 2009. *Turbo bidens* Linnaeus 1758 (Gastropoda: Clausiliidae) misidentified for 250 years. *Journal of Conchology*, **40**: 19–30.
- Linnaeus, C.** 1758. *Systema Naturæ*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Linnaeus, C.** 1767. *Systema Naturæ*, Ed. 12, vol. 1, part 2. Pp. 533–1327. Salvii, Holmiae.
- Müller, O.F.** 1774. *Vermivm terrestrium et fluviatilium, seu animalium infusoriorum, helminthicorum, et testaceorum, non marinorum, succincta historia. Volumen alterum.* - pp. I–XXXVI [= 1–36], 1–214, [1–10]. Heineck & Faber, Havniæ & Lipsiæ. <http://www.biodiversitylibrary.org/item/46380>
- Schröter, J.S.** 1784. *Einleitung in die Conchylienkenntniß nach Linné. Zweyter Band. Nebst vier Kupfertafeln.* - pp. I–VIII [= 1–8], 1–726, Tab. IV–VII [= 4–7]. Gebauer, Halle. <http://resolver.sub.uni-goettingen.de/purl?PPN581947843>

Acknowledgement of receipt of this application was published in BZN **69**: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3580***Exechocentrus lancearius* Simon, 1889 (Arachnida, Araneae, ARANEIDAE): proposed replacement of the holotype by a neotype**

Nikolaj Scharff

Natural History Museum of Denmark, Zoological Museum and Center for Macroecology, Evolution and Climate, Universitetsparken 15, DK-2100 Copenhagen, Denmark (e-mail: nscharff@snm.ku.dk)

Gustavo Hormiga

The George Washington University, Department of Biological Sciences, 20203 G St. NW Washington D.C. 20050, U.S.A. (e-mail: hormiga@gwu.edu)

Abstract. The purpose of this application, under Article 75.5 of the Code, is to replace the holotype of *Exechocentrus lancearius* Simon, 1889, an incomplete specimen, with a neotype.

Keywords. Nomenclature; taxonomy; Arachnida; Araneae; ARANEIDAE; MASTOPHORINAE; *Exechocentrus*; *Exechocentrus lancearius*; bolas spiders; Madagascar.

1. Simon (1889, p. 227) described the new genus and species *Exechocentrus lancearius* based on a single female specimen from Madagascar which was missing the abdomen (and therefore the genitalia, assuming that it was an adult specimen). Simon probably felt compelled to describe this species, despite the incomplete specimen, because of the unusual and bizarre spines and projections of the cephalothorax (Fig. 1). Simon redescribed the same specimen in 1895 (p. 888, figs. 951–953). No other species has been described for the genus. To this date, males of *Exechocentrus* remain unknown.

2. The first complete adult specimen of *Exechocentrus*, a female, was collected by researchers from the California Academy of Sciences in Madagascar in 2000. A second complete adult female was collected by us in Madagascar in 2009. As far as we have been able to determine, no other adult specimens of *Exechocentrus* exist in collections. Altogether three juveniles have been reported from the literature (Emerit 1980, 2000).

3. The two adult specimens have the same unusual and bizarre spines and projections on the cephalothorax as those observed on the holotype of *Exechocentrus lancearius* (MNHN catalogue number ES 8339; Fig. 1), but these two adult specimens clearly represent two different species, as shown by their different genitalia as well as the different abdominal shape and length of the abdominal projections.

4. In most spider groups (including the family ARANEIDAE) genitalia provide the most accurate way for discriminating species because very often congeneric species have very similar somatic morphology but vary in their genitalic structures. Since the type material of *Exechocentrus lancearius* consists only of the cephalothorax (i.e. is

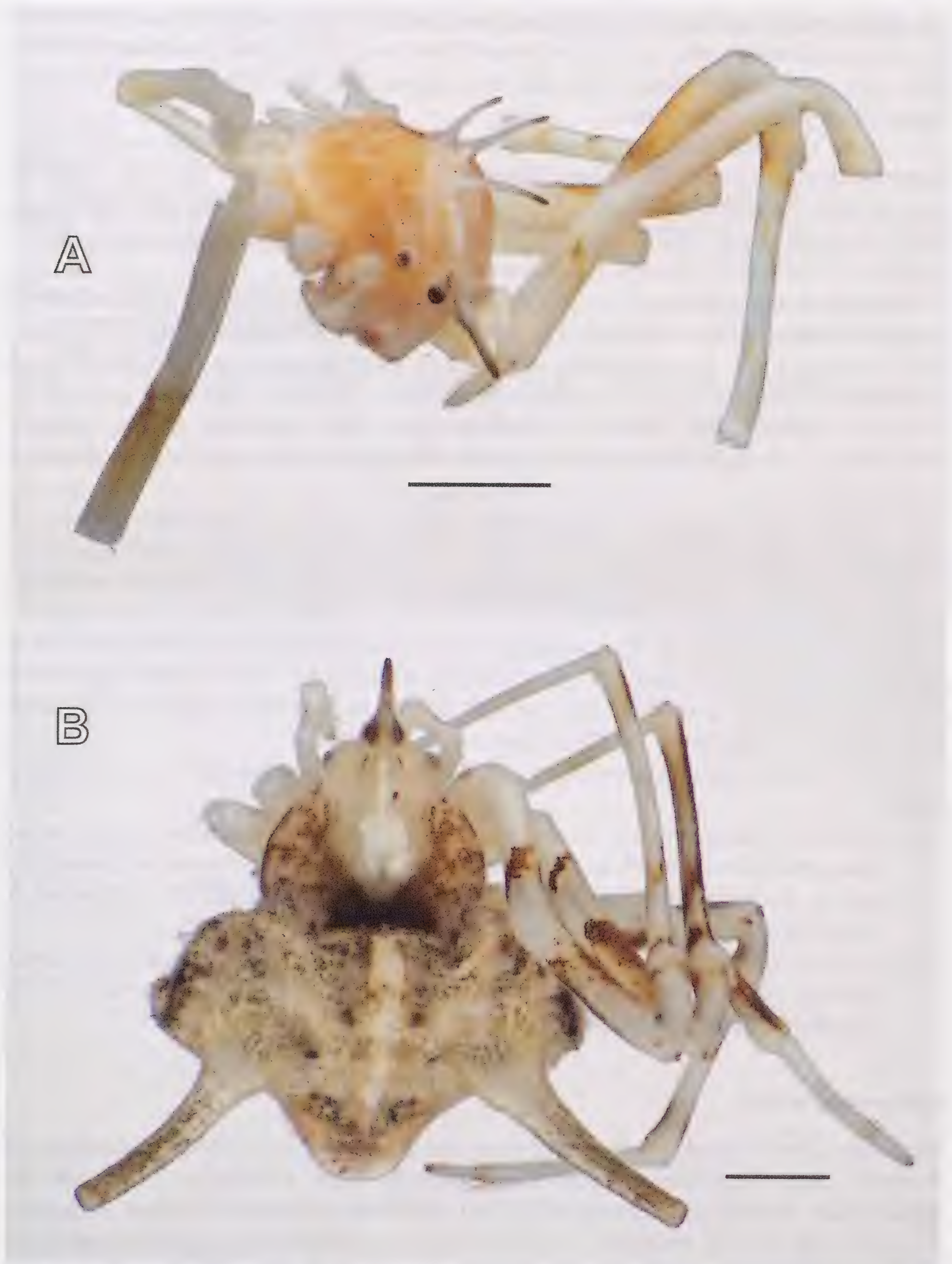


Fig. 1. *Exechocentrus lancearius* Simon, 1889: **A**, original holotype (catalogue number ES 8339); **B**, proposed neotype (catalogue number ZMUC00021482). Scale bar: 1 mm.

missing the abdomen), and this does not include any diagnostic features that could link the type specimen with either of the adult specimens found, we are unable to fix the name of *Exechocentrus lancearius* to an adult specimen with genitalia.

5. Measurements of the holotype have been compared to similar measurements of the two adult specimens as well as measurements of the known juveniles (Emerit, 1980, pp. 14–17) and these data clearly suggest that Simon's original holotype represents a juvenile specimen.

6. Given the high diversity of spiders in Madagascar, it is entirely possible that more than two species of *Exechocentrus* exist on the island. For the sake of nomenclatural stability we would therefore like to fix this name to an adult specimen (with genitalia) and thus provide a species description that would allow future workers to accurately identify *Exechocentrus lancearius*.

7. The specimen proposed for neotype designation for *Exechocentrus lancearius* is an adult female (ZMUC00021482) that we collected in Madagascar near Ranomafana National Park. It is deposited at the Zoological Museum of the University of Copenhagen (Denmark). We have examined Simon's specimen, deposited in the Paris museum (MNHN ES 8339): its museum label data (as well as the original description) give only 'Madagascar' as the collecting locality, and no information about collector.

8. In summary, the taxonomic identity of *Exechocentrus lancearius* cannot be adequately determined from the holotype, which is an incomplete female specimen without genitalia. The name *lancearius*, if based on this specimen, may be considered a nomen dubium, thereby threatening the stability of both species and genus name. In order to fix the name of *Exechocentrus lancearius* to an adult specimen, we find it necessary to designate a neotype. According to Article 75.5 of the Code replacement of an unidentifiable name-bearing type with a neotype requires an application to the International Commission on Zoological Nomenclature.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *lancearius* Simon, 1889, as published in the binomen *Exechocentrus lancearius*, and to designate as neotype the female specimen ZMUC00021482 deposited in the Zoological Museum, University of Copenhagen (Denmark);
- (2) to place on the Official List of Species Names in Zoology the name *lancearius* Simon, 1889, as published in the binomen *Exechocentrus lancearius* and as defined by the neotype designated in (1) above.

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References

- Emerit, M.** 1980. *Exechocentrus lancearius* Simon, 1889: la redécouverte d'une araignée rare de Madagascar; considérations sur Exechocentreae. *Revue Arachnologique*, **3**: 13–23.
- Emerit, M.** 2000. Contribution à l'étude des Aranéides de Madagascar et des Comores: la sous-famille des Cyrtarachninae (Araneae, Araneidae). *Revue Arachnologique*, **13**(11): 145–162.
- Simon, E.** 1889. Etudes arachnologiques. 21e Mémoire. XXXI. Descriptions d'espèces et de genres nouveaux de Madagascar et de Mayotte. *Annales Société Entomologique de France*, (6)**8**: 223–236.
- Simon, E.** 1895. *Histoire naturelle des Araignées I*. 1084 pp. Librairie Encyclopédique de Roret, Paris.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3584***Erythemis* Hagen, 1861: proposed precedence over *Lepthemis* Hagen, 1861 (Insecta, Odonata)**

Ângelo Parise Pinto

Programa de Pós-Graduação em Ciências Biológicas (Zoologia) IB – USP, Museu de Zoologia da Universidade de São Paulo, Ipiranga 04263–000, Av. Nazaré 481, São Paulo, SP, Brazil (e-mail: odonata_angelo@hotmail.com)

Rosser W. Garrison

California Department of Food & Agriculture, 3294 Meadowview Road, Sacramento, CA 95832–1448, U.S.A. (e-mail: rosser.garrison@cdfa.ca.gov)

Dennis R. Paulson

Slater Museum of Natural History, University of Puget Sound, Tacoma, WA 98416, U.S.A. (e-mail: dennispaulson@comcast.net)

Thomas W. Donnelly

2091 Partridge Lane, Binghamton NY 13903, U.S.A. (e-mail: tdonelly@binghamton.edu)

Michael L. May

Rutgers University, New Brunswick, NJ 08901, U.S.A. (e-mail: mimay@rci.rutgers.edu)

Abstract. The purpose of this application, under Articles 23.9.3 and 81.1 of the Code, is to conserve the widespread usage of the generic name *Erythemis* Hagen, 1861 for a group of common dragonflies from the New World over the simultaneously published nominal genus *Lepthemis* Hagen, 1861, selected to take precedence by the First Reviser action (Article 24.2), whenever these names are considered to be synonyms. This proposal seeks to achieve the least change in the nomenclature of the species currently placed in these two genera, in strict accordance with Principle 4 of the Code.

Keywords. Nomenclature; taxonomy; Insecta; Odonata; LIBELLULIDAE; *Erythemis*; *Lepthemis*; *Erythemis peruviana*; *Mesothemis*; dragonflies; New World.

1. Hagen (1861), in a work dealing with North American species, established three genera for the reception of several new and previously described species of New World dragonflies. The first, *Lepthemis* (p. 160) included three species, *Libellula vesiculosa* Fabricius, 1775, *Libellula haematogastra* Burmeister, 1839 and *Libellula verbenata* Hagen, 1861. The second, *Erythemis* (p. 168) included *Erythemis furcata* Hagen, 1861, *Libellula bicolor* Hoffmannsegg in Erichson, 1848 and *Erythemis*

longipes Hagen, 1861. The third, *Mesothemis* (p. 170) included *Libellula simplicicollis* Say, 1840, *Mesothemis collocata* Hagen, 1861, *Mesothemis corrupta* Hagen, 1861, *Mesothemis illota* Hagen, 1861, *Libellula attala* Selys in Sagra, 1857, *Libellula mithra* Selys in Sagra, 1857 and *Libellula longipennis* Burmeister, 1839 as valid species. He also listed *Libellula acuta* Say, 1840 as a synonym of *Lepthemis vesiculosa* (p. 161), *Libellula caerulans* Rambur, 1842 and *Libellula maculiventris* Rambur, 1842 as synonyms of *Libellula simplicicollis* (p. 170), *Libellula annulata* Rambur, 1842 (partim, nec *Libellula annulata* Palisot de Beauvois, 1807) as a synonym of *Libellula mithra* Selys in Sagra, 1857 (p. 172), *Libellula socia* Rambur, 1842 and *Libellula truncatula* Rambur, 1842 as synonyms of *Libellula longipennis* (p. 173).

2. In that same work Hagen (1861), in his ‘List of South American Neuroptera’ (pp. 316–318), included fifteen more species in these three genera. Under the nominal genus *Lepthemis* (p. 316) five more species were cited, two already described species, *Libellula cardinalis* Erichson, 1848 and *Libellula attenuata* Erichson, 1848, and he introduced the following new species-group names: *Lepthemis picta* Hagen, 1861, *Lepthemis extensa* Hagen, 1861 and *Lepthemis cultriformis* Hagen, 1861, all of them as nomina nuda since they do not satisfy the provisions of Article 12 of the Code. For *Erythemis* (pp. 317–318) he included two more species-group names: *Libellula peruviana* Rambur, 1842 and *Libellula rubriventris* Blanchard, 1845, and added *Erythemis lavata* Hagen, 1861 (a nomen nudum). Finally for *Mesothemis* (p. 318) he included seven more species: *Libellula annulata* Palisot de Beauvois, 1807, *Libellula plebeja* Rambur, 1842, *Libellula connata* Burmeister, 1839, *Libellula communis* Rambur, 1842, *Libellula distinguenda* Rambur, 1842 and *Libellula abbreviata* Rambur, 1842, and again introduced a nomen nudum, *Mesothemis gilva* Hagen, 1861. All of these species-group names listed by Hagen (1861, pp. 160–173, 316–318) encompass originally included nominal species (Article 67.2.1), rendering each of the genera clearly heterogeneous groups. No type species were selected for any of these three genera.

3. Kirby (1889), by subsequent designation, fixed *Libellula vesiculosa* Fabricius, 1775 as type species for *Lepthemis* Hagen, 1861 (p. 302), *Libellula simplicicollis* Say, 1840 as type species for *Mesothemis* Hagen, 1861 (p. 303), and *Libellula peruviana* Rambur, 1842 as type species for *Erythemis* Hagen, 1861 (p. 305). Although it can be argued that *Libellula peruviana* was not a name originally included in the nominal genus *Erythemis*, which would render Kirby’s type fixation invalid under Article 67.2.5 of the Code, Hagen (1861, p. 169), under *Erythemis bicolor* (Hoffmannsegg in Erichson, 1848, p. 583), suggested synonymy with *Libellula peruviana* Rambur, 1842 (‘Is it different of *Libellula peruviana* Rambur?’) although he (Selys, 1850, p. 398) earlier had considered both as synonyms (‘Dans le Voyage de Schomburgk au Brésil et à la Guyane, M. Erichson a décrit sous le nom de *Lib. bicolor* la *Lib. peruviana*, dit M. Hagen. . .’ [In the Voyage of Schomburgk in Brazil and Guyana, Mr Erichson described under the name of *Lib. bicolor*, *Lib. peruviana*, says Mr Hagen. . .]). In addition, Hagen (1861, p. 318) included in his List of South American Neuroptera *Libellula peruviana* in *Erythemis*, a species for which he had previously (p. 169) and again (p. 318) suggested synonymy with *Libellula bicolor* Hoffmannsegg in Erichson, 1848 (‘Perhaps *E. bicolor*’). Even though *Libellula peruviana* Rambur, 1842 was provisionally cited by Hagen (1861, p. 169) under the nominal genus *Erythemis*, all nominal species listed by Hagen (1861, pp. 160–173, 316–318) in that same work

(excluding nomina nuda and those that do not satisfy the provisions of Article 67.2), even when appearing on different pages, should be considered as names originally included under provisions of the Article 67.2.1, and all are eligible for type species fixation. This validates Kirby's (1889, p. 305) act fixing *Libellula peruviana* Rambur, 1842 as type species of the nominal genus *Erythemis* Hagen, 1861. Kirby very likely followed Hagen's advice that *Libellula peruviana* was the same species as *L. bicolor* Hoffmannsegg in Erichson, 1848, and chose it as the type species.

4. Kirby (1890, p. 40), followed by Calvert (1906, p. 30), considered *Libellula bicolor* a junior synonym of *Libellula peruviana*. Calvert (1906, p. 30–31) established synonymy between *Erythemis* and *Mesothemis* and chose *Erythemis* as senior synonym based on page priority. Since Calvert (1906), *Mesothemis* as a genus-group name was rarely used, with most citations up to 1940 referring to its type species *Libellula simplicicollis* (e.g. Needham & Heywood, 1929, pp. 246–248; Hinman, 1933, p. 50; Ahrens, 1938, p. 14; Ferguson, 1942, p. 148). After 1940, *Mesothemis* has been listed as a junior synonym consistently except for two ecological studies where it was cited as a valid genus (Polcyn, 1994, p. 443), and a subgenus (Harrison & Lighton, 1998, p. 1739).

5. The number of names included under *Lepthemis* has fluctuated from the original eight (Hagen, 1861, pp. 160–162, 316), to five (Hagen, 1877, pp. 73–74), then to 11 (Brauer, 1868, p. 724), but these last two works simply listed species-group names. Calvert (1907, p. 339), followed by Ris (1911, pp. 594–608) in his monograph of the entire family, reduced this number to one, its type species *L. vesiculosa*, and this was the only name associated with the genus from 1907 to 1957.

6. The number of names included under *Erythemis* has fluctuated from the original six (Hagen, 1861, pp. 168–169, 317–318), to 11 (Brauer, 1868, p. 723), but the latter work again simply listed species-group names. Williamson (1923, pp. 8–10), in his review of the genus, reduced this number to nine, a number which remained stable until 1957.

7. *Lepthemis* Hagen, 1861 and *Erythemis* Hagen, 1861 were considered valid genera until Kennedy's (1923, p. 20) evaluation of members of these two genera. He suggested that *Erythemis* and *Lepthemis* (and the Old World *Rhodothemis* Ris, 1909) could be congeneric based on vesica spermalis (penis) morphology, but he did not formally synonymise them ('...The writer would be inclined to call the whole series of five or six groups *Lepthemis* and would consider the individual groups as subgenera...' and '...The comprehensive genus would have to be *Lepthemis* because of the [page] priority in the use of that name by Hagen...').

8. Rácenis (1958, p. 217 [footnote]), following Kennedy's noncommittal opinion cited above, and acting as the First Reviser, formally synonymised *Erythemis* and *Lepthemis* and opted for *Lepthemis*, based apparently on page priority ('Según mi opinión, *Lepthemis* Hagen, 1861 y *Erythemis* Hagen, 1861 son congénéricos y merecen solamente el status de subgéneros. Para emplear el nombre *Lepthemis* para este género, véase también las opiniones de Kennedy (1923)' '[In my opinion, *Lepthemis* Hagen 1861 and *Erythemis* Hagen 1861 are congeneric and merit subgeneric status only. To use the name *Lepthemis* for this genus, see also the opinions of Kennedy (1923)]').

9. Gloyd (1980, p. 104) discussed the dual use of the generic names *Lepthemis* (with one species) and *Erythemis* (with 11 [sic!] species), noting that '...page priority is no

longer considered adamant in the choice of a name.’ and ‘If the species in these two genera are eventually proven to be congeneric, then retaining the name *Erythemis* would evoke less change.’ She cautioned against a synonymy pending a thorough revision of a group, a similar opinion also expressed by Belle (1978, p. 5).

10. Usage of either name during the last 50 years (1960–2011) shows an inconsistency of use for the ten species presently constituting these two genera. Only six citations, Lutz & Pittman (1970, pp. 280–281, 283), Paulson (1977, p. 180; 1982, p. 266), Sherk (1977, p. 394; 1978, p. 62), and Fleck (2004, pp. 53–54) followed Rácenis (1958, 1959) in using *Leptthemis* as senior synonym for all ten species; 25 citations consider *Erythemis* and *Leptthemis* as valid genera; and over 120 citations by at least 65 different authors consider *Erythemis* a senior synonym (full list of citations available from the authors). Current usage of *Erythemis* as senior synonym is overwhelmingly predominant in the literature. One common species from the Eastern United States, *Erythemis simplicicollis*, has been the subject of studies in age maturation (McVey, 1985), behavior (Belle & Whitcomb, 1961; Currie, 1963; Edwards, 1987; Sanborn, 1996), sexual selection and sperm competition (McVey & Smittle, 1984; Waage, 1986; McVey, 1988), physiology and parasitology (May, 1976, 1979; McVey, 1984; Harrison et al., 1994; Painter et al., 1996; Locklin & Vodopich, 2010), taxonomy (Donnelly, 2004a); it appeared in numerous illustrated odonate field guides and faunal lists (Dunkle, 1989; Abbott, 2001, 2005, 2006; Curry, 2001; Nikula et al., 2002, 2003; Legler et al., 2003; Manolis, 2003; Mead, 2003; Biggs, 2004; Beaton, 2007; Behrstock, 2008), and general accounts on Odonata (Arnett, 2000; Silsby, 2001; Corbet, 2004; Triplehorn & Johnson, 2005; Evans, 2007). There are also numerous taxonomic references, checklists, handbooks and textbooks where species placed under *Erythemis*, *Leptthemis* and *Mesothemis* have been included all together under *Erythemis* in South America (Rodrigues-Capitulo, 1992; Costa & Pujol-Luz, 1993; Carvalho & Nessimian, 1998; Costa et al., 2000; Heckman, 2006; von Ellenrieder & Muzón, 2008); Central America (Measey, 1994; Boomsma & Dunkle, 1996; Ramírez, Paulson & Esquivel, 2000; Förster, 2001); North America (González-Soriano & Novelo-Gutiérrez, 1996; Dunkle, 2000; Needham et al., 2000; Donnelly, 2004b; Paulson, 2009), or the whole of the New World (Davies & Tobin, 1985; Garrison, 1991; Bridges, 1994; Steinmann, 1997; Garrison et al., 2006).

11. An unpublished Master’s dissertation (Pinto, 2008), currently in the final stage for publication (Pinto & Carvalho, in prep.) shows all 10 species constituting *Erythemis* and *Leptthemis* to be congeneric, necessitating the choice of either *Leptthemis* or *Erythemis* as senior synonym. Setting aside the senior synonym *Leptthemis* in favor of the almost universally used *Erythemis* would cause the least change in nomenclature and would promote stability for this group of dragonflies, especially as several members of the latter genus are common widespread species, some of which have been the subject of studies in behavior and sexual selection. Applying the rule of First Reviser (Article 24.2.1 of the Code) would not promote stability of nomenclature (Principle 4 of the Code).

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the generic name *Erythemis* Hagen, 1861 be given precedence over *Leptthemis* Hagen, 1861, whenever the two are considered to be synonyms;

- (2) to place on the Official List of Generic Names in Zoology the name *Erythemis* Hagen, 1861 (gender: feminine), type species by subsequent designation by Kirby (1889) *Libellula peruviana* Rambur, 1842, with the endorsement that it is to be given precedence over *Leptthemis* Hagen, 1861, whenever these two names are considered synonyms;
- (3) to place on the Official List of Generic Names in Zoology the name *Leptthemis* Hagen, 1861 (gender: feminine), type species by subsequent designation by Kirby (1889) *Libellula vesiculosa* Fabricius, 1775, with the endorsement that it is not to be given priority over *Erythemis* Hagen, 1861, whenever these two names are considered synonyms;
- (4) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *peruviana* Rambur, 1842, as published in the binomen *Libellula peruviana*, senior subjective synonym of *Libellula bicolor* Hoffmannsegg in Erichson, 1848, specific name of the type species of *Erythemis* Hagen, 1861;
 - (b) *vesiculosa* Fabricius, 1775, as published in the binomen *Libellula vesiculosa*, specific name of the type species of *Leptthemis* Hagen, 1861.

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References

- Abbott, J.C. 2001. Distribution of dragonflies and damselflies (Odonata) in Texas. *Transactions of the American Entomological Society*, **127**(2): 199–228.
- Abbott, J.C. 2005. *Dragonflies and damselflies of Texas and the south-central United States: Texas, Louisiana, Arkansas, Oklahoma, and New Mexico*. vii, 344 pp. Princeton University Press, Princeton.
- Abbott, J.C. 2006. *Dragonflies and damselflies (Odonata) of Texas, vol. 1*. vii, 320 pp. Odonata Survey of Texas, Austin.
- Ahrens, C. 1938. A list of dragonflies (Odonata) taken in southern Alaska. *Entomological News*, **49**: 225–227.
- Arnett, R.H. 2000. *American insects. A handbook of the insects of America north of Mexico*. Ed. 2. xvii, 1003 pp. CRC Press, Boca Raton.
- Beaton, G. 2007. *Dragonflies & damselflies of Georgia and the Southeast*. ix, 355 pp. The University of Georgia Press, Athens.
- Behrstock, R.A. 2008. *Dragonflies & damselflies of the Southwest*. 80 pp. Rio Nuevo Publishers, Tucson.
- Bell, R. & Whitcomb, W.H. 1961. *Erythemis simplicicollis* (Say), a dragonfly predator of the Bollworm Moth. *The Florida Entomologist*, **44**(2): 95–97.
- Belle, J. 1978. Dragonfly records from Highlands County, Florida, United States. *Notulae Odonatologicae*, **1**(1): 4–5.
- Biggs, K. 2004. *Dragonflies of California and common dragonflies of the Southwest*. 160 pp. Azalea Creek Publishing Co., Sebastopol.
- Boomsma, T. & Dunkle, S.W. 1996. Odonata of Belize. *Odonatologica*, **25**(1): 17–29.
- Brauer, F. 1868. Verzeichniß der bis jetzt bekannten Neuropteren im Sinne Linne's. *Verhandlungen Zoologisch-botanischen Gesellschaft in Wien*, **18**: 359–416, 711–742.
- Bridges, C.A. 1994. *Catalogue of the family-group, genus-group and species-group names of the Odonata of the world* (Third Edition). xxi, 905 pp. Privately published, Urbana, Illinois.

- Burmeister, H. 1839. *Handbuch der Entomologie*, v. 2, part 2. Pp. 757–1050. Enslin, Berlin.
- Calvert, P.P. 1906. Nomenclature of certain North American Odonata. *Entomological News*, 17: 30–31.
- Calvert, P.P. 1907. Odonata. Pp. 17–420. In: Godman, F.D. & Salvin, O. (Eds.), *Biologia Centrali-Americana: Neuroptera*. v.50, 1892–1908. xxx, 420 pp. Porter & Dulaü Co., London.
- Carvalho, A.L. & Pujol-Luz, J.R. 1992. On the odonate fauna of Ilha Grande and some other coastal islands of the State of Rio de Janeiro, Brazil. *Notulae Odonatologicae*, 3(10): 157–159.
- Carvalho, A.L. & Nessimian, J.L. 1998. Odonata do Estado do Rio de Janeiro, Brasil: hábitos e hábitos das larvas. Pp. 3–28. In: Nessimian, J. L. & Carvalho, A. L. (Eds.), *Ecologia de Insetos Aquáticos*. xiv, 1–161 pp. Series Oecologia Brasiliensis, vol. V. PPGE-UFRJ. Rio de Janeiro, Brasil.
- Corbet, P. 2004. *Dragonflies. Behavior and ecology of Odonata* (Third printing). xxxii, 829 pp. Comstock Publishing Associates, Ithaca.
- Costa, J.M., Machado, A.B.M., Lencioni, F.A.A. & Santos, T.C. 2000. Diversidade e distribuição dos Odonata (Insecta) no estado de São Paulo, Brasil: Parte I – Lista das espécies e registros bibliográficos. *Publicações Avulsas do Museu Nacional*, 80: 1–27.
- Costa, J.M. & Pujol-Luz, J.R. 1993. Descrição da larva de *Erythemis mithroides* (Brauer) e notas sobre as larvas conhecidas do gênero (Odonata, Libellulidae). *Revista Brasileira de Zoologia*, 10(3): 443–448.
- Currie, N. 1963. Mating behavior and local dispersal in *Erythemis simplicicollis*. *Proceedings North Central Branch, Entomological Society of America*, 18: 112–115.
- Curry, J.R. 2001. *Dragonflies of Indiana*. xiv, 303 pp. Indiana Academy of Science, Indianapolis.
- Davies, D.A.L. & Tobin, P. 1985. The dragonflies of the world: a systematic list of the extant species of Odonata. Vol. 2. Anisoptera. *Societas Internationalis Odonatologica, Rapid Communications, Supplement*, 5: 1–151.
- Donnelly, T.W. 2004a. *Erythemis simplicicollis* and *collocata* - subspecies? *Argia*, 15(4): 11–13.
- Donnelly, T.W. 2004b. Distribution of North American Odonata. Part II: Macromiidae, Corduliidae and Libellulidae. *Bulletin of American Odonatology*, 8(1): 11–32.
- Dunkle, S.W. 1989. *Dragonflies of the Florida Peninsula, Bermuda, and the Bahamas*. 154 pp. Scientific Publishers, Gainesville.
- Dunkle, S.W. 2000. *Dragonflies through binoculars*. viii, 266 pp. Oxford University Press, Oxford.
- Edwards, G.B. 1987. Predation by adult *Erythemis simplicicollis* (Say) on spiders (Anisoptera: Libellulidae). *Notulae odonatologicae*, 2(9): 153–154.
- Erichson, W.F. 1848. Insecten. Pp. 553–617. In: Schomburgk, R. *Reisen in British Guiana in den Jahren 1840–1844, versuch einer fauna und flora von British Guiana*. v.3, viii, Pp. 533–1261. Verlagsbuchhandlung von J.J. Weber, Leipzig.
- Evans, A.E. 2007. *Field guide to insects and spiders of North America*. 497 pp. Sterling Publishing Co., Inc., New York.
- Fabricius, J.C. 1775. *Systema Entomologiae, Sistens Insectorum Classes, Ordines, Genera, Species, Adiectis, Synonymis, Locis, Descriptionibus, Observationibus*. xxx, 832 pp. Flensburgi et Lipsiae in Officina Libraria, Kortii.
- Ferguson, A. 1942. Scattered records of Texas and Louisiana Odonata with additional notes on the Odonata of Dallas County. *Field and Laboratory*, 10(2): 145–149.
- Fleck, G. 2004. La larve du genre *Cyanothemis* Ris, 1915 (Odonata: Anisoptera: Libellulidae). Conséquences phylogénétiques. *Annales de la Société Entomologique de France*, 39(4): 51–58.
- Förster, S. 2001. *The Dragonflies of the Central America exclusive of Mexico and West Indies. A guide to their identification*. Second Edition. x, 141 pp. Gunnar Rehfeldt, Wolfenbüttel, Germany.
- Garrison, R.W. 1991. Synonymic list of New World Odonata. *Argia*, 3(2): 1–30.
- Garrison, R.W., von Ellenrieder, N. & Louton, J.A. 2006. *Dragonfly genera of the New World: an illustrated and annotated key to Anisoptera*. xiv, 368 pp. The Johns Hopkins University Press, Baltimore.

- Gloyd, L.K. 1980. The status of the generic names *Erythemis*, *Lepthemis*, and *Mesothemis* (Anisoptera: Libellulidae). *Notulae Odonatologicae*, **1**(6): 103–104.
- González-Soriano, E. & Novelo-Gutiérrez, R. 1996. Odonata. Pp. 147–167 in Llorente-Bousquets, J., Garcia-Aldrete, A.N. & Gonzalez-Soriano, E. (Eds.), *Biodiversidad, taxonomía y biogeografía de artrópodos de México: Hacia una síntesis de su conocimiento*. 660 pp. Universidad Autónoma de México, México D.F.
- Hagen, H.A. 1861. A synopsis of the Neuroptera of North America with a list of the South American species. *Smithsonian Institution Miscellaneous Collections*, **4**: xx, 1–347.
- Hagen, H.A. '1875' [1877]. Synopsis of the Odonata of America. *Proceedings of the Boston Society of Natural History*, **18**: 20–96.
- Harrison, J.F. & Lighton, J.R.B. 1998. Oxygen-sensitive flight metabolism in the dragonfly *Erythemis simplicicollis*. *The Journal of Experimental Biology*, **201**: 1739–1744.
- Harrison, S.J., Platt, A.P. & Sanders S.P. 1994. An electrophoretic comparison of enzymes from *Anax junius* (Drury) and *Erythemis simplicicollis* (Say) (Anisoptera: Aeshnidae, Libellulidae). *Odonatologica*, **23**(4): 421–429.
- Heckman, C.W. 2006. *Encyclopedia of South American aquatic insects: Odonata – Anisoptera. Illustrated keys to known families, genera, and species in South America*. viii, 705 pp. Springer, Dordrecht.
- Hinman, E.H. 1933. Dragon-flies predacious on *Tabanus* spp. *Entomological News*, **44**: 49–50.
- Kennedy, C.H. 1923. The phylogeny and the distribution of the genus *Erythemis* (Odonata). *Miscellaneous Publications of the Museum of Zoology University of Michigan*, **11**: 19–21.
- Kirby, W.F. 1889. A revision of the subfamily Libellulinae, with descriptions of new genera and species. *Transactions of the Zoological Society of London*, **12**(9): 249–348.
- Kirby, W.F. 1890. *A synonymic catalogue of Neuroptera Odonata, or dragonflies, with an appendix of fossil species*. ix, 202 pp. Gurney & Jackson, London.
- Legler, K., Legler, D. & Westover, D. 2003. *Color guide to dragonflies of Wisconsin*. Ed. 4.0. 68 pp. Amberwing publishing, Sauk City.
- Locklin, J.L. & Vodopich, D.S. 2010. Eugregarine parasitism of *Erythemis simplicicollis* (Say) at a constructed wetland: a fitness cost for females? (Anisoptera: Libellulidae). *Odonatologica*, **39**(4): 319–331.
- Lutz, P.E. & Pittman, A.R. 1970. Some ecological factors influencing a community of adult Odonata. *Ecology*, **51**(2): 279–284.
- Manolis, T. 2003. *Dragonflies and damselflies of California*. x, 201pp. University of California Press, Berkeley.
- May, M.L. 1976. Thermoregulation and adaptation to temperature in dragonflies (Odonata: Anisoptera). *Ecological Monographs*, **46**(1): 1–32.
- May, M.L. 1979. Energy metabolism of dragonflies (Odonata: Anisoptera) at rest and during endothermic warm-up. *Journal of Experimental Biology*, **83**: 79–94.
- Mead, K. 2003. *Dragonflies of the North Woods*. x, 203 pp. Kollath-Stensaas Publishing, Duluth.
- Measey, G.J. 1994. Some Odonata from Belize, Central America. *Notulae Odonatologicae*, **4**(3): 40–46.
- McVey, M.E. 1984. Egg release rates with temperature and body size in libellulid dragonflies (Anisoptera). *Odonatologica*, **13**(3): 377–385.
- McVey, M.E. 1985. Rates of color maturation in relation to age, diet, and temperature in male *Erythemis simplicicollis* (Say) (Anisoptera: Libellulidae). *Odonatologica*, **14**(2): 101–114.
- McVey, M.E. 1988. The opportunity for sexual selection in a territorial dragonfly, *Erythemis simplicicollis*. Pp. 44–58 in Clutton-Brock, T.H. (Ed.), *Reproductive success: studies of individual variation in contrasting breeding systems*. ix, 548 pp. University Chicago Press, Chicago.
- McVey, M.E. & Smittle, B.E. 1984. Sperm precedence in the dragonfly *Erythemis simplicicollis*. *Journal of Insect Physiology*, **30**(8): 619–628.
- Needham, J.G. & Heywood, H.B. 1929. *A handbook of dragonflies of North America (Anisoptera)*. viii, 615 pp. Berkeley, University of California Press.
- Needham, J.G., Westfall Jr., M.J. & May, M.L. 2000. *Dragonflies of North America. Revised Edition*. xv, 939 pp. Scientific Publishers, Inc., Gainesville.

- Nikula, B., Sones, J., Stokes, D. & Stokes, L. 2002. *Stokes beginner's guide to dragonflies and damselflies*. 159 pp. Little, Brown & Company, Boston.
- Nikula, B., Loose, J.L. & Burne, M.R. 2003. *A field guide to the Dragonflies and Damselflies of Massachusetts*. vii, 197 pp. Massachusetts Division of Fisheries & Wildlife, Natural Heritage & Endangered Species Program, Boston.
- Painter, M.K., Tennessen, K.J. & Richardson, T.D. 1996. Effects of repeated applications of *Bacillus thuringiensis israelensis* on the mosquito predator *Erythemis simplicicollis* (Odonata: Libellulidae) from hatching to final instar. *Environmental Entomology*, **25**(1): 184–191.
- Paulson, D.R. 1977. Odonata. Pp. 170–184 in Hurlbert, S.H. (Ed.), *Biota Acuatica de Sudamerica Austral*. San Diego State University, San Diego.
- Paulson, D.R. 1982. Odonata. Pp. 249–277. In: Hurlbert, S.H. & Villalobos-Figueroa, A. (Eds.), *Aquatic biota of Mexico, Central America and the West Indies*. San Diego State University, San Diego.
- Paulson, D.R. 2009. *Dragonflies of the West*. 535 pp. Princeton University Press, Princeton.
- Pinto, A.P. 2008. *Análise cladística de Erythemis Hagen, 1861 com avaliação de seu posicionamento filogenético em Sympetrinae (Insecta, Odonata, Libellulidae)* [Cladistic Analysis of *Erythemis* Hagen, 1861 with assessment of its phylogenetic placement in Sympetrinae]. xiv, 144 pp. UFRJ / MN, Rio de Janeiro. [Dissertation presented in the post-graduate program in Biological Sciences (Zoology)/UFRJ, as requirement for degree of Master of Science].
- Pinto, A.P. & Carvalho, A.L. [in preparation]. A morphological cladistic analysis of *Erythemis* Hagen, 1861 and the significance of congruence test of characters for homology statements of wing venation in Anisoptera (Odonata).
- Polcyn, D.M. 1994. Thermoregulation during summer activity in Mojave Desert dragonflies (Odonata: Anisoptera). *Functional Ecology*, **8**: 441–449.
- Rácenis, J. 1958. Los Odonatos Neotropicales en la colección de la Facultad de Agronomía de la Universidad Central de Venezuela. *Acta Biologia Venezuelica*, **2**(19): 179–226.
- Rácenis, J. 1959. Lista de los Odonata del Perú. *Acta Biologia Venezuelica*, **2**(34): 467–522.
- Rambur, P. 1842. *Histoire naturelle des insectes. Neuroptères*. i–xviii, 534 pp. Librairie Encyclopédique de Roret, Paris.
- Ramírez, A., Paulson, D.R. & Esquivel, C. 2000. Odonata of Costa Rica: diversity and checklist of species. *Revista de Biología Tropical*, **48**(1): 247–254.
- Ris, F. 1911. Libellulines 2, Libellulinen 5. In: *Catalogue Systématique et Descriptif des Collections Zoologique Du Baron Edmond Selys de Longchamps*, **13**: 529–700.
- Rodrigues Capitulo, A. 1992. Los Odonata de la república Argentina. *Fauna de agua dulce de la República Argentina*, **34**(1): 1–91.
- Sanborn, A.F. 1996. The cicada *Diceroprocta delicata* (Homoptera: Cicadidae) as prey for the dragonfly *Erythemis simplicicollis* (Anisoptera: Libellulidae). *Florida Entomologist*, **79**(1): 69–70.
- Say, T. '1839' [1840]. Descriptions of new North American neuropterous insects, and observations on some already described. *Journal of the Academy of Natural Sciences of Philadelphia*, **8**(1): 9–46.
- Selys-Longchamps, Edm. de. 1850. Revue des Odonates ou Libellules d'Europe. *Mémoires de la Société Royale des Sciences de Liège*, **6**: i–xxii, 1–408.
- Selys-Longchamps, Edm. de. 1857. Odonates de Cuba. Pp. 436–472. In: Sagra, R. de La (Ed.). *Histoire Physique, Politique et Naturelle de l'Île de Cuba. Animaux articulés, tomo 7*: 35–473. Arthus Bertrand Editeur, Paris.
- Sherk, T.E. 1977. Development of the compound eyes of dragonflies (Odonata). I. Larval compound eyes. *Journal of Experimental Zoology*, **201**(3): 391–416.
- Sherk, T.E. 1978. Development of the compound eyes of dragonflies (odonata). III. Adult compound eyes. *Journal of Experimental Zoology*, **203**(1): 61–79.
- Silby, J.D. 2001. *Dragonflies of the World*. vii, 216 pp. CSIRO Publishing, Collingwood.
- Steinmann, H. 1997. *World catalogue of Odonata, Volume II Anisoptera*. xiv, 636 pp. Walter de Gruyter, Berlin.

- Triplehorn, C.A. & Johnson, N.F.** 2005. *Borror and DeLong's introduction to the study of insects*. Ed. 7. x, 864 pp. Thomson Brooks/Cole, Belmont.
- von Ellenrieder, N. & Muzón, J.** 2008. An updated checklist of the Odonata from Argentina. *Odonatologica*, **37**(1): 55–68.
- Waage, J.K.** 1986. Sperm displacement by two libellulid dragonflies with disparate copulation durations (Anisoptera). *Odonatologica*, **15**(4): 429–444.
- Williamson, E.B.** 1923. Notes on the genus *Erythemis* with a description of a new species (Odonata). *Miscellaneous Publications of the Museum of Zoology University of Michigan*, **11**: 1–18.

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Case 3578

***Copromyza fenestralis* Fallén, 1820 (currently *Pteremis fenestralis*; Insecta, Diptera, SPHAEROCERIDAE): proposed conservation of usage by designation of a neotype**

J. Roháček

Slezské zemské muzeum, Tyršova 1, 746 01 Opava, Czech Republic
(e-mail: rohacek@szmo.cz)

Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the specific name of the widespread West Palaearctic saprophagous fly *Pteremis fenestralis* (Fallén, 1820) (SPHAEROCERIDAE) in its current usage. A revision of all extant syntypes revealed that they belong to five or six species of four different genera of SPHAEROCERIDAE, none of which is identical with *Pteremis fenestralis* as currently understood. It is proposed that this series of syntypes should be set aside and a male specimen from Sweden, which corresponds to the current usage of the name, be designated as neotype.

Keywords: Taxonomy; nomenclature; Diptera; SPHAEROCERIDAE; *Copromyza*; *Copromyza fenestralis*; neotype designation.

1. Fallén (1820, p. 8) established the name *Copromyza fenestralis* based on a number of specimens of both sexes from Esperöd, Sweden. Eight specimens considered syntypes (see Kim, 1972), two males, 5 females and one with sex unknown, were found in the Fallén collection housed in the Swedish Museum of Natural History (Naturhistoriska Riksmuseet), Stockholm, and one questionable male syntype in the Stenhammar collection in the Museum of Evolution – Zoology, Uppsala University, Uppsala. The series in the Fallén collection (Stockholm) is labelled with two hand-written (by Fallén) labels ‘C. fenestralis ♀’ preceding 7 specimens and ‘C. fenestralis ♂’ in front of 1 specimen. The specimen in the Stenhammar collection (Uppsala) is labelled with hand-written labels ‘Oel’, ‘Hgn’, ‘99’ (circular label) and ‘fenestralis’ + two illegible words (surely not by Fallén). This specimen was listed by Kim (1972) as a probable syntype (but see below). There are no additional syntypes in the collections of Fallén (Stockholm), Zetterstedt (Lund) and/or Stenhammar (Uppsala) (see Kim, 1972).

2. A revision of the above syntypes (and the doubtful syntype in Uppsala) showed that they belong to 5 (or 6) species: *Gonioneura spinipennis* (Haliday, 1836) 2 males, *Pullimosina heteroneura* (Haliday, 1836) 1 female, *Spelobia clunipes* (Meigen, 1830) 1 female, *Spelobia luteilabris* (Rondani, 1880) 3 females, *Spelobia* sp. 1 specimen of unknown sex (abdomen and head lost) and *Chaetopodella scutellaris* (Haliday, 1836) 1 male (the doubtful syntype in Uppsala).

3. Fallén’s (1820, p. 8) original description of *Copromyza fenestralis* is too concise, superficial (corresponding with the subfamily LIMOSININAE as currently defined), and is insufficient for recognition at even genus-group level.

4. Stenhammar (1855, pp. 404–406) redescribed the species (as *Limosina fenestralis*) on the basis of a syntype specimen received from J.W. Zetterstedt. However, it is very doubtful whether the male specimen in the Stenhammar collection really is this syntype because it was collected by A.E. Holmgren and certainly did not originate from Esperöd (the type locality); consequently, Stenhammar's (1855) redescription may have been based on a different specimen. Duda (1918, pp. 88–90) followed Stenhammar's concept of the species and redescribed it in more detail as *Limosina (Stenhammaria) fenestralis*. The current usage of the specific name is based on Duda's redescription, and it was accepted by all subsequent authors (e.g. Spuler, 1924; Duda, 1925, 1938; Richards, 1930; Collin, 1956; Hackman, 1964, 1969; Papp, 1973a, b, 1984; Marshall, 1984; Narchuk, 1988; Pitkin, 1988; Florén, 1989; Roháček, 1998; Roháček et al. 2001; Marshall, et al., 2011).

5. None of the revised syntypes belong to *Pteremis fenestralis* as currently understood. Moreover, 5 (or even 6) species were recognized among these syntypes, all bearing younger specific names than *Copromyza fenestralis*, and belonging to four different genera of SPHAEROCERIDAE. Except for *Chaetopodella scutellaris* (based on a doubtful syntype in Uppsala), none of the remaining species externally resembles *Pteremis fenestralis* in the current concept. Consequently, the selection of a lectotype from any of these syntypes would necessitate a series of nomenclatural changes at specific and even generic (see below) level.

6. *Copromyza fenestralis* Fallén is the type species of two genera, viz. *Coprobria* Lioy, 1864 and *Stenhammaria* Duda, 1918, both currently treated as synonyms of *Pteremis* Rondani, 1856 based on the synonymy of *Limosina nivalis* Haliday, 1833 (type species of *Pteremis*) with *Copromyza fenestralis* Fallén. Designation of a lectotype from any of the above syntypes would thus result not only in a new specific synonym but also in re-instatement of the generic name *Coprobria* Lioy and, because it is an older name than *Gonioneura* Rondani, 1880, *Pullimosina* Roháček, 1983, *Spelobia* Spuler, 1924 or *Chaetopodella* Duda, 1920, in a new generic synonym and numerous new generic combinations (cf. Roháček et al., 2001; Marshall et al., 2011).

7. Generic classification and nomenclature of Palaearctic SPHAEROCERIDAE has already been well settled and generally accepted (Roháček, 1998; Roháček, et al., 2001); hence the selection of a lectotype from the available syntypes of *C. fenestralis* would cause considerable confusion. It is therefore important that the current use of the nominal taxon *fenestralis* Fallén remains unchanged. This can only be achieved by setting aside the existing type series and designating a neotype: a male specimen labelled 'SWEDEN: Huddinge, Gömmaren lake res., 59°15'15"N, 17°55'40"E, 58 m, J. Roháček leg.', '7.7.2011, peat-bog, sifting *Sphagnum*, moss and grass', 'NEOTYPUS ♂, *Copromyza fenestralis* Fallén, 1820, J. Roháček des. 2011' (red label) and '*Pteremis fenestralis* (Fallén), ♂, J. Roháček det. 2011', see Figs 1–3, deposited in the Swedish Museum of Natural History, Stockholm) conforming to the current usage of the name.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Copromyza fenestralis* Fallén, 1820, and to designate as neotype a male specimen from Sweden labelled 'SWEDEN: Huddinge, Gömmaren lake res., 59°15'15"N, 17°55'40"E, 58 m, J. Roháček leg.', '7.7.2011, peat-bog, sifting *Sphagnum*,



Figs. 1–3. Neotype of *Copromyza fenestralis* Fallén, 1820. 1, the neotype specimen (scale = 0.5 mm), 2, pin with neotype and all labels (scale = 10 mm), 3, labels of the neotype (scale = 10 mm).

moss and grass', 'NEOTYPUS ♂, *Copromyza fenestralis* Fallén, 1820, J. Roháček des. 2011' (red label) and '*Pteremis fenestralis* (Fallén), ♂, J. Roháček det. 2011' (deposited in the Fallén collection in the Swedish Museum of Natural History, Stockholm);

- (2) to place on the Official List of Specific Names in Zoology the name *fenestralis* Fallén, 1820, as published in the binomen *Copromyza fenestralis* and as defined by the neotype designated in (1) above.

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References

- Collin, J.E. 1956. Some new British Borboridae (Diptera). *Journal of the Society for British Entomology*, **5**(5): 172–178.
- Duda, O. 1918. Revision der europäischen Arten der Gattung *Limosina* Macquart (Dipteren). *Abhandlungen der K.K. Zoologisch-Botanischen Gesellschaft in Wien*, **10**(1): 1–240.
- Duda, O. 1925. Die außereuropäischen Arten der Gattung *Leptocera* Olivier *Limosina* Macquart (Dipteren) mit Berücksichtigung der europäischen Arten. *Archiv für Naturgeschichte, Berlin, Abteilung A*, **90**(11)(1924): 5–215.
- Duda, O. 1938. 57. Sphaeroceridae (Cypselidae). In Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region*, vol. 6. 182 pp. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart.
- Fallén, C.F. 1820. *Heteromyzides Sveciae. Quarum descriptionem Venia Ampl. Facult. Philos. Lund. In Lyceo Carolino d. XXVI Maji MDCCCXX*. Berlingianis, Lundae [=Lund]. 10 p. Resp. P. Bjørkman. 8vo.
- Florén, F. 1989. Distribution, phenology and habitats of the lesser dung fly species (Diptera, Sphaeroceridae) of Sweden and Norway, with notes from adjacent countries. *Entomologisk Tidskrift*, **110**: 1–29.
- Hackman, W. 1964. On reduction and loss of wings in Diptera. *Notulae Entomologicae*, **44**: 73–93.
- Hackman, W. 1969. A review of the zoogeography and classification of the Sphaeroceridae (Borboridae, Diptera). *Notulae Entomologicae*, **49**: 193–210.
- Kim, K.C. 1972. Notes on types of Sphaeroceridae by Fallén, Stenhammar, and Zetterstedt, with lectotype of *Copromyza equina* (Fall.) (Diptera). *Entomological News*, **83**: 203–217.
- Marshall, S.A. 1984. *Leptocera (Pteremis) Rondani* in North America (Diptera, Sphaeroceridae). *Proceedings of the Entomological Society of Washington*, **86**: 396–399.
- Marshall, S.A. & Richards, O.W. 1987. 93. Sphaeroceridae. Pp. 993–1006 in McAlpine J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R., Wood, D. M. (Eds), *Manual of Nearctic Diptera. Agriculture Canada Monograph*, **28**, vol. 2. vi, 675–1332 pp. Minister of Supply & Services (Canada), Ottawa.
- Marshall, S.A., Roháček, J., Dong, H. & Buck, M. 2011. The state of Sphaeroceridae (Diptera: Acalyptratae): a world catalog update covering the years 2000–2010, with new generic synonymy, new combinations, and new distributions. *Acta Entomologica Musei Nationalis Pragae*, **51**(1): 217–298.
- Narchuk, E.P. 1988. 89. Family Sphaeroceridae (Borboridae, Cypselidae). Pp. 559–590 in Bei-Bienko, G.Ya. (Ed.), *Keys to the insects of the European part of the USSR*, vol. 5: Diptera and Siphonaptera, pt. 2. 943 pp. Akademiya Nauk, Leningrad.
- Papp, L. 1973a. Sphaeroceridae (Diptera) from Mongolia. *Acta Zoologica Academiae Scientiarum Hungaricae*, **19**: 369–425.
- Papp, L. 1973b. *Trágyalegyek - harmatlegyek - Sphaeroceridae - Drosophilidae*. Fauna Hungariae **112**, 146 pp. Akadémiai Kiadó, Budapest.
- Papp, L. 1984. Family Sphaeroceridae (Borboridae). Pp. 68–107 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. vol. 10. 402 pp. Akadémiai Kiadó, Budapest.

- Pitkin, B.R.** 1988. Lesser dung flies. Diptera: Sphaeroceridae. *Handbooks for the identification of British insects*, vol. 10, pt. 5e, 175 pp. Royal Entomological Society of London, London.
- Richards, O.W.** 1930. The British species of Sphaeroceridae (Borboridae, Diptera). *Proceedings of the Zoological Society of London*, **1930**: 261–345.
- Roháček, J.** 1998: 3.43. Family Sphaeroceridae. Pp. 463–496 in Papp, L. & Darvas, B. (Eds.), *Contributions to a manual of Palaearctic Diptera*, vol. 3., Higher Brachycera. 880 pp. Science Herald, Budapest.
- Roháček, J., Marshall, S.A., Norrbom, A.L., Buck, M., Quiros, D.I. & Smith, I.** 2001. *World catalog of Sphaeroceridae (Diptera)*. 414 pp. Slezské zemské muzeum, Opava.
- Spuler, A.** 1924. North American species of the subgenera *Opacifrons* Duda and *Pteremis* Rondani of the genus *Leptocera* Olivier (Diptera, Borboridae). *Psyche: a journal of entomology*, **31**: 121–135.
- Stenhammar, C.** 1855. Skandiniens Copromyzine granskade och beskrifne. *Kongliga Vetenskaps-Akademiens Handlingar, Stockholm*, (3) **1853**: 257–442.

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Case 3585***Atomosia* Macquart, 1838 (Insecta, Diptera, ASILIDAE): proposed conservation of usage**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Entomological Research, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Abstract. The purpose of this application, under article 70.2 of the Code, is to conserve the current usage of the generic name *Atomosia* Macquart, 1838 for a well-established genus of robber flies. The type species of *Atomosia* has long been assumed to be *Atomosia incisuralis* Macquart, 1838. However, the correct type species is *Atomosia annulipes* Macquart, 1838, which is currently recognized as a valid species of *Aphestia* Schiner, 1866. Acceptance of *Atomosia annulipes* as the type species of *Atomosia* would change the current concept of that genus to that of *Aphestia*, and the remaining species currently included in *Atomosia* would require a new genus-group name as there are no junior synonyms from which to choose the next available name. To avoid the nomenclatural instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Atomosia* Macquart, 1838 prior to that of *Atomosia incisuralis* Macquart, 1838 by Coquillett (1910) be set aside.

Keywords. Nomenclature; taxonomy; Diptera; ASILIDAE; *Atomosia*; *Atomosia incisuralis*; *Atomosia annulipes*; *Cormansis*; *Aphestia*; robber flies; Neotropical; Nearctic.

1. Macquart (3 October 1838, p. 73; 18 December 1839, p. 213; see Evenhuis, 1997, p. 512) proposed the generic name *Atomosia* for six new species: *A. annulipes* Macquart, *A. nigripes* Macquart, *A. unicolor* Macquart, *A. incisuralis* Macquart, *A. brevicornis* Macquart and *A. pusilla* Macquart, 1838. A type species was not designated.

2. Duponchel in d'Orbigny (1841, p. 309) designated *Atomosia annulipes* Macquart, 1838 as the type species of *Atomosia*. This designation was overlooked by subsequent authors until recently and is the earliest subsequent designation of an originally included species.

3. Coquillett (1910, p. 512) designated *Atomosia incisuralis* Macquart (3 October 1838, p. 76; 18 December 1839, p. 216) as the type species of *Atomosia*. The universally accepted concept of *Atomosia* is based on this type species designation. *Atomosia annulipes* is currently treated as a junior subjective synonym of *Laphria puella* Wiedemann, 1828; the accepted valid name of this taxon is *Atomosia puella*.

4. Evenhuis & Thompson (1990, p. 232–233) discovered the overlooked type species designation for *Atomosia* by Duponchel in d'Orbigny (1841). They suggested that 'Acceptance of Duponchel's designation would change the current generic

concepts of *Atomosia* and *Aphestia*. Application to ICZN to suppress the designation by Duponchel may be warranted in this case’.

5. *Atomosia* Macquart, 1838, found throughout the Neotropical and southern Nearctic regions, contains over 50 species (Barnes, 2008) and is the type genus of the tribe ATOMOSIINI Lynch Arribálzaga (1882, p. 144; originally as ‘ATOMOSIARIA’), which includes 35 genera (Hull, 1962) in the subfamily LAPHRIINAE Macquart, 1838. Catalogues of Diptera and taxonomic revisions record *Atomosia* as a taxonomically valid genus occurring in the Nearctic (e.g. Hull, 1962; Martin & Wilcox, 1965; Poole, 1996; Barnes, 2008) and Neotropical (e.g. Hull, 1962; Martin & Papavero, 1970) regions.

6. Nomenclatural instability would result from the adoption of *Atomosia annulipes* as the type species of *Atomosia*, as designated by Duponchel in d’Orbigny (1841). *Atomosia annulipes* is currently treated as a species of *Aphestia* Schiner, 1866 (e.g. Hull, 1962; Papavero, 2009). *Atomosia annulipes* is also the currently accepted valid name of *Aphestia brasiliensis* Schiner, 1866, the type species of *Aphestia*. Acceptance of *A. annulipes* as the type species of *Atomosia* would result in the subjective synonymy of *Atomosia* and *Aphestia*, with *Atomosia* having priority. The remaining species currently included in *Atomosia* would require a new genus-group name to be established as there are no suitable junior synonyms available. The generic name *Cormansis* Walker, 1851 was explicitly treated as a junior synonym of *Atomosia* by Hull, 1962 and provisionally by Martin & Papavero, 1970 but this synonymy was overturned by Oldroyd (1975) who transferred *Cormansis* to a different tribe. Thus *Cormansis* Walker, 1851 cannot be used as the next available genus for these species. Since both *Atomosia* and *Aphestia* are currently treated within the ATOMOSIINI, the family-group name would not need to change, although the taxonomic concept circumscribing the genus-group name upon which it is based would be changed.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Atomosia* Macquart, 1838 before that of *Atomosia incisuralis* Macquart, 1838 by Coquillett (1910);
- (2) to place on the Official List of Generic Names in Zoology the name *Atomosia* Macquart, 1838 (gender: feminine), type species *Atomosia incisuralis* Macquart, 1838 by subsequent designation by Coquillett (1910), as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *incisuralis* Macquart, 1838, as published in the binomen *Atomosia incisuralis* (specific name of the type species of *Atomosia* Macquart, 1838), as ruled in (1) above;
- (4) to place on the Official List of Family-Group Names in Zoology the name ATOMOSIINI Lynch Arribálzaga, 1882 (type genus *Atomosia* Macquart, 1838).

References

- Barnes, J.K. 2008. The genus *Atomosia* Macquart (Diptera: Asilidae) in North America north of Mexico. *Proceedings of the Entomological Society of Washington*, **110**(3): 701–732.
- Coquillett, D.W. 1910. The type-species of the North American genera of Diptera. *Proceedings of the United States National Museum*, **37**: 499–647.
- Evenhuis, N.L. 1997. *Litteratura Taxonomica Dipterorum (1758–1930) being a selected list of the books and prints of Diptera taxonomy from the beginning of Linnaean nomenclature to*

- the end of the year 1930; containing information on the biographies, bibliographies, types, collections, and patronymic genera of the authors listed in this work; including detailed information on publication dates, original and subsequent editions, and other ancillary data concerning the publications listed herein.* 2 vols. x, 871 pp. Backhuys Publishers, Leiden.
- Evenhuis, N.L. & Thompson, F.C.** 1990. Type designations of genus-group names of Diptera given in d'Orbigny's *Dictionnaire universel d'histoire naturelle*. *Bishop Museum Occasional Papers*, **30**: 226–258.
- Hull, F.M.** 1962. Robber flies of the world. The genera of the family Asilidae. *Bulletin of the United States National Museum*, **224**: 1–907.
- Lynch Arribáizaga, E.** 1882. Catálogo de los dípteros hasta ahora descritos que se encuentran en las Repúblicas del Rio de la Plata [part]. *Boletín de la Academia Nacional de Ciencias de Córdoba*, **4**: 109–152.
- Macquart, P.-J.-M.** 1838. *Diptères exotiques nouveaux ou peu connus*. Tome premier.—2^e partie. 207 pp., 14 pls. N.E. Roret, Paris. [3 October]
- Macquart, P.-J.-M.** 1839. *Diptères exotiques nouveaux ou peu connus*. Tome premier.—2^e partie. *Mémoires de la Société Royale des Sciences, Agriculture et Arts, Lille*, **1838**(3): 121–323. [18 December]
- Martin, C.H. & Papavero, N.** 1970. Family Asilidae. *A Catalogue of the Diptera of the Americas South of the United States*, **35B**: 1–135.
- Martin, C.H. & Wilcox, J.** 1965. Family Asilidae, pp. 360–401 in Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. (Eds.), *A catalog of the Diptera of the Americas north of Mexico*. *United States Department of Agriculture, Agricultural Handbook*, **286**: i–iv, 1–1696.
- Oldroyd, H.** 1975. Family Asilidae, pp. 99–156 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region*, vol. II. Suborder Brachycera through division Aschiza, suborder Cyclorrhapha. ix, 459 pp. University of Hawaii Press, Honolulu.
- Orbigny, C.V.D. d'.** 1841. [Livraison 17], pp. 257–320. *Dictionnaire universel d'histoire naturelle résumant et complétant*. . . Tome deuxième. 795 pp. C. Renard, Paris.
- Papavero, N.** 2009. Catalogue of Neotropical Diptera. Asilidae. *Neotropical Diptera*, **17**: 1–178.
- Poole, R.W.** 1996. Diptera, pp. 15–604 in Poole, R.W. & Gentili, P. (Eds.), *Nomina Insecta Nearctica. A checklist of the insects of North America*. Volume 3: Diptera, Lepidoptera, Siphonaptera. 1143 pp. Entomological Information Services, Rockville, Maryland.
- Schiner, J.R.** 1866. Die Wiedemann'schen Asiliden, interpretiert und in die seither errichteten neuen Gattungen eingereiht. *Verhandlungen der Zoologische-Botanischen Gesellschaft in Wien (Abhandlungen)*, **16**: 649–722.
- Walker, F.** 1851. Diptera. Part II, pp. 77–156 in: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* vol. 1. 474 pp. Van Voorst, London.
- Wiedemann, C.R.W.** 1828. *Aussereuropäische zweiflügelige Insekten. Als Fortsetzung des Meigenschen Werks*. Erster Theil. xxxii, 608 pp. 7 pls. Schulz, Hamm.

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Case 3586***Glossina* Wiedemann, 1830 (Insecta, Diptera, GLOSSINIDAE): proposed precedence over *Nemorhina* Robineau-Desvoidy, 1830**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Entomological Research, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Thomas Pape

*Natural History Museum of Denmark, Universitetsparken 15, 2100
Copenhagen, Denmark (e-mail: TPape@snm.ku.dk)*

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic name *Glossina* Wiedemann, 1830 (Diptera, GLOSSINIDAE), which is a widely used name for a well-established and medically important genus of tsetse flies. It is threatened by its infrequently used senior subjective synonym, *Nemorhina* Robineau-Desvoidy, 1830. It is proposed that *Glossina* Wiedemann, 1830 be conserved by reversing the precedence relative to *Nemorhina* Robineau-Desvoidy, 1830 under the plenary power of the Commission, in the interest of nomenclatural stability.

Keywords. Nomenclature; taxonomy; Diptera; GLOSSINIDAE; *Glossina*; *Nemorhina*; *Glossina longipalpis*; *Nemorhina palpalis*; tsetse; Afrotropical.

1. Robineau-Desvoidy (1830, p. 389) proposed the generic name *Nemorhina* with one originally included species, *Nemorhina palpalis* Robineau-Desvoidy, 1830 (p. 390), which is the type by monotypy.

2. Wiedemann (1830, p. 253) proposed the generic name *Glossina* with one originally included species, *Glossina longipalpis* Wiedemann, 1830 (p. 254), which is the type by monotypy.

3. *Glossina* Wiedemann, 1830 is a well-established genus of tsetse flies and one of the more medically important Diptera, with an extensive medical and taxonomic literature. As intermediate hosts of particularly *Trypanosoma brucei* Plimmer & Bradford, 1899, tsetse flies are vectors of sleeping sickness in humans and nagana in cattle (for a bibliography of over 1500 references to *Glossina*, see Mulligan & Potts, 1970). *Glossina* includes over 30 taxonomically valid species-group names (e.g. Pont, 1980; Bisby et al., 2011), with extant species restricted in distribution to the Afrotropical Region [fossil species are known from North America and Europe, cf. Evenhuis (1994), Wedmann (2000)], and it is the type genus of the well-established family GLOSSINIDAE Theobald, 1903 (p. ii) (e.g. Sabrosky, 1999).

4. *Nemorhina* Robineau-Desvoidy, 1830 is a genus-group name comprising nine taxonomically valid species-group names and is known only from the Afrotropical Region (e.g. Pont, 1980). It has occasionally been used as a valid subgenus of *Glossina*

(e.g. Pont, 1980; Sutton & Carlson, 1997) or its included species have been referred to as the *Glossina palpalis* group, and it is thus treated as a junior synonym of *Glossina* (e.g. Mohamed-Ahmed & Mihok, 1999).

5. Smith et al. (1980) recognized the potential dating conflict of the works by Robineau-Desvoidy (1830) and Wiedemann (1830), which has a direct bearing on the priority of these two genus-group names. An annotation under the reference for Wiedemann's 1830 work in that bibliography states (Smith et al., 1980, p. 1184): 'This part is considered to have been published prior to Robineau-Desvoidy, 1830. See Aubertin, 1933.' Aubertin (1933, p. 141, footnote) attempted to resolve the problem of the dating of these two works by stating 'According to Mr. C.D. Sherborn there is no contemporary evidence of the month in which either of these works appeared, but the former [Wiedemann (1830)] was reviewed in 'Isis' in June 1831, while the latter [Robineau-Desvoidy (1830)] was not reviewed in the same periodical until the following November. In the absence of conclusive evidence, it would appear reasonable to assume that the order in which the works were noticed in 'Isis' indicates the order in which they were published. Wiedemann's names are therefore given priority in this paper.' This order of priority of the two works was followed by Evenhuis et al. (1989, p. 947) where they cited Aubertin's (1933) article as justification. However, subsequent research revealed that Robineau-Desvoidy (1830) was actually published on 26 June 1830 (date recorded in the *Bibliographie de la France*) and that Wiedemann (1830) was published on 1 September 1830 (date of an advertisement by the publisher stating it was just published) (Evenhuis, 1997, pp. 821–822). This change in the relative priority of these two works affects common usage and stability of nomenclature for a number of names proposed in these two works that are currently treated in synonymy. The genus-group names *Nemorhina* Robineau-Desvoidy, 1830 and *Glossina* Wiedemann, 1830 are two such names affected.

6. Following the Principle of Priority, *Nemorhina* Robineau-Desvoidy, 1830 [26 June] becomes the senior synonym of *Glossina* Wiedemann, 1830 [1 September]. Acceptance of this priority would threaten the long-established usage of *Glossina* Wiedemann by placing it as a junior subjective synonym of *Nemorhina* Robineau-Desvoidy when the two are considered synonymous. The genus currently known as *Glossina* would become *Nemorhina* (with *Glossina* either in junior subjective synonymy or as the valid name for a subgenus of *Nemorhina*, depending on taxonomic views of the generic classification). Evenhuis et al. (2010, p. 117) noted the conflict of these two genera and stated that an application to reverse priority of these two genera was in preparation. This is the application alluded to.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *Glossina* Wiedemann, 1830 [1 September] precedence over *Nemorhina* Robineau-Desvoidy, 1830 [26 June], whenever the two are considered to be synonyms of each other;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Glossina* Wiedemann, 1830 [1 September] (gender: feminine), type species by monotypy *Glossina longipalpis* Wiedemann, 1830, with the endorsement that it is to be given precedence over *Nemorhina* Robineau-Desvoidy, 1830 [26 June], whenever the two are considered to be synonyms of each other;

- (b) *Nemorhina* Robineau-Desvoidy, 1830 [26 June] (gender: feminine), type species by monotypy *Nemorhina palpalis* Robineau-Desvoidy, 1830, with the endorsement that it is not to be given priority over *Glossina* Wiedemann, 1830 [1 September], whenever the two are considered to be synonyms of each other;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *longipalpis* Wiedemann, 1830, as published in the binomen *Glossina longipalpis* (specific name of the type species of *Glossina* Wiedemann, 1830 [1 September]);
 - (b) *palpalis* Robineau-Desvoidy, 1830, as published in the binomen *Nemorhina palpalis* (specific name of the type species of *Nemorhina* Robineau-Desvoidy, 1830 [26 June]);
- (4) to place on the Official List of Family-Group Names in Zoology the name GLOSSINIDAE Theobald, 1903 (type genus *Glossina* Wiedemann, 1830);

References

- Aubertin, D. 1933. Notes on certain species of the genus *Orthellia*, with a description of one new species. *Annals and Magazine of Natural History*, (10)11: 139–144.
- Bisby, F.A., Roskov, Y.R., Orrell, T.M., Nicolson, D., Paglinawan, L.E., Bailly, N., Kirk, P.M., Bourgoin, T., Baillargeon, G. & Ouvrard, D. (Eds.), 2011. Species 2000 & ITIS Catalogue of Life: 2011 Annual Checklist. DVD; Species 2000: Reading, U.K.
- Evenhuis, N.L. 1994. *Catalogue of the fossil flies of the world (Insecta: Diptera)*. 600 pp. Backhuys Publishers, Leiden.
- Evenhuis, N.L., Thompson, F.C., Pont, A.C. & Pyle, B.L. 1989. Literature cited. Pp. 809–991 in Evenhuis, N.L. (Ed.), *Catalog of the Diptera of the Australasian and Oceanian regions*. 1155 pp. Bishop Museum Press, Honolulu & E.J. Brill, Leiden.
- Evenhuis, N.L., O'Hara, J.E., Pape, T. & Pont, A.C. 2010. Nomenclatural studies toward a world catalog of Diptera genus-group names. Part I. André-Jean-Baptiste Robineau-Desvoidy. *Zootaxa*, 2373, 1–265.
- Evenhuis, N.L. 1997. *Litteratura Taxonomica Dipterorum (1758–1930) being a selected list of the books and prints of Diptera taxonomy from the beginning of Linnaean nomenclature to the end of the year 1930; containing information on the biographies, bibliographies, types, collections, and patronymic genera of the authors listed in this work; including detailed information on publication dates, original and subsequent editions, and other ancillary data concerning the publications listed herein*, 2 vols. x, 871 pp. Backhuys Publishers, Leiden.
- Mohamed-Ahmed, M.M. & Mihok, S. 1999. Responses of *Glossina fuscipes fuscipes* (Diptera: Glossinidae) and other Diptera to carbon dioxide in linear and dense forests. *Bulletin of Entomological Research*, 89: 177–184.
- Mulligan, H.W. & Potts, W.H. 1970. *The African trypanosomiases*. lxxxviii, 950 pp. Wiley, New York.
- Pont, A.C. 1980. Family Glossinidae. Pp. 762–765 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1420 pp. British Museum (Natural History), London.
- Robineau-Desvoidy, J.-B. 1830. Essai sur les myodaires. *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France* (Sciences Mathématiques et Physiques), (2) 2: 1–813.
- Sabrosky, C.W. 1999. Family group names in Diptera. An annotated catalog. *Myia*, 10: 1–360.
- Smith, K.G.V., Crosskey, R.W. & Pont, A.C. 1980. Bibliography. Pp. 889–1196 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1420 pp. British Museum (Natural History), London.
- Sutton, B.D. & Carlson, D.A. 1997. Cuticular hydrocarbons of *Glossina*, III: Subgenera *Glossina* and *Nemorhina*. *Journal of Chemical Ecology*, 23: 1291–1320.

- Theobald, F.V.** 1903. Report on collections of mosquitoes or Culicidae, etc., from Gambia, and descriptions of new species. *Memoirs of the Liverpool School of Tropical Medicine*, **10**(Appendix): i–xi.
- Wedmann, S.** 2000. Die Insekten der oberoligozänen Fossillagerstätte Enspel (Westerwald, Deutschland): Systematik, Biostratonomie und Paläoökologie. *Mainzer Naturwissenschaftliches Archiv*, **23**: 1–154.
- Wiedemann, C.R.W.** 1830. *Aussereuropäische zweiflügelige Insekten. Als Fortsetzung des Meigenschen Werkes. Erster Theil.* xii, 684 pp. Schulz, Hamm.

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Case 3588***Brachystoma* Meigen, 1822 (Insecta, Diptera, BRACHYSTOMATIDAE):
proposed conservation of usage**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Entomological Research, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A*
(e-mail: NealE@bishopmuseum.org)

Bradley J. Sinclair

*Canadian National Collection of Insects & Canadian Food Inspection
Agency, Ottawa Plant Laboratory - Entomology, K.W. Neatby Bldg.,
C.E.F., 960 Carling Ave., Ottawa, ON, Canada K1A 0C6*
(e-mail: bradley.sinclair@inspection.gc.ca)

Abstract. The purpose of this application, under Article 70.2 of the Code, is to conserve the current usage of the generic name *Brachystoma* Meigen, 1822 for a well-established genus of brachystomatid flies. The type species of *Brachystoma* has long been assumed to be *Syrphus vesiculosus* Fabricius, 1794, designated by Blanchard in 1840. However, the correct type species is *Brachystoma longicornis* Meigen, 1822, designated by Westwood in 1840, which is currently recognized as a valid species of *Trichopeza* Rondani, 1840. Acceptance of the earlier designation would threaten stability of nomenclature and taxonomy of the common and worldwide genus-group name *Brachystoma* Meigen, 1822 and make it the senior synonym of *Trichopeza* Rondani, 1840, thus requiring species in *Brachystoma* to be associated with the next available generic name *Blepharoprocta* Loew, 1862. To avoid the nomenclatural instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Brachystoma* Meigen, 1822 prior to that of *Syrphus vesiculosus* Fabricius, 1794 by Blanchard (1840) be set aside.

Keywords: Nomenclature; taxonomy; Diptera; BRACHYSTOMATIDAE; *Brachystoma*; *Syrphus vesiculosus*; *Brachystoma longicornis*; *Trichopeza*; brachystomatid flies; worldwide.

1. Meigen (1822, p. 12) proposed the generic name *Brachystoma* for two species: *Brachystoma longicornis* Meigen, 1822 and *Syrphus vesiculosus* Fabricius, 1794. A type species was not designated.

2. Westwood (1840, p. 132) designated *Brachystoma longicornis* Meigen, 1822 as the type species of *Brachystoma*. This designation was overlooked by subsequent authors until recently and is the earliest subsequent designation of an originally included species.

3. Blanchard (1840, p. 582) designated *Syrphus vesiculosus* Fabricius, 1794 (p. 299) as the type species of *Brachystoma*. The universally accepted concept of *Brachystoma* is based on this type species designation.

4. The priority of the type-species designation of Westwood (1840 [June]) over that of Blanchard (1840 [26 December]) was first noted in Evenhuis (1994, p. 345), where it was decided 'In the interests of stability of nomenclature and common usage, an earlier type designation by Westwood (1840: 132) of *Brachystoma longicornis* Meigen, which would make *Brachystoma* a senior synonym of *Trichopeza* Rondani, is here set aside. Application to the I.C.Z.N. to suppress Westwood's designation in favor of Blanchard's is necessary'. Sabrosky (1999) echoed the sentiment for such an application; and this is that application alluded to. To show evidence of the long-established and common usage of *Brachystoma*, a list of 25 publications in the last 50 years is held by the Secretariat of the Commission.

5. *Brachystoma* Meigen, 1822 is found primarily in the Northern Hemisphere zoogeographical regions, contains almost a dozen taxonomically valid species-group names (Plant, 2010), and is the type genus of the family BRACHYSTOMATIDAE Melander, 1908 (Sabrosky, 1999). The world catalogue of EMPIDIDAE (Yang et al., 2007), recent regional catalogues of Diptera and recent taxonomic works record *Brachystoma* as a taxonomically valid genus occurring in the Nearctic (e.g. Melander, 1965; Poole, 1996), Neotropical (e.g. Plant, 2010), Oriental (e.g. Plant, 2010), and Palearctic (e.g. Chvála & Wagner, 1989) regions. Species previously recorded in *Brachystoma* in the Afrotropical Region (Smith, 1980) were transferred to the genus *Rubistella* Garret Jones, 1940 by Sinclair (1995).

6. Nomenclatural instability would result from the adoption of *Brachystoma longicornis* as the type species of *Brachystoma* as designated by Westwood (1840, p. 132). *Brachystoma longicornis* is currently treated as a species of *Trichopeza* Rondani, 1856 (p. 150) (e.g. Chvála & Wagner, 1989; O'Hara et al., 2011). Acceptance of *B. longicornis* as the type species of *Brachystoma* would result in the subjective synonymy of *Brachystoma* and *Trichopeza*, with *Brachystoma* having priority. The genus currently known as *Trichopeza* would take the name *Brachystoma* (with *Trichopeza* in subjective synonymy). The genus currently known as *Brachystoma* would take the name *Blepharoprocta* Loew, 1862 (p. 194) (the next available genus-group name). Collin (1961) noted that the designation of the types of *Brachystoma* by Westwood and Blanchard were in the same year and implied that the exact dates of publication (not known at that time) might create problems in generic concept. He further stated: 'By accepting priority of Blanchard's designation the use of both names [*Brachystoma* Meigen, 1822 and *Trichopeza* Rondani, 1856] in their present sense can be retained.' We concur that this is the most pragmatic course to take.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Brachystoma* Meigen, 1822 before that of *Syrphus vesiculosus* Fabricius, 1794 by Blanchard (1840);
- (2) to place on the Official List of Generic Names in Zoology the name *Brachystoma* Meigen, 1822 (gender: feminine), type species *Syrphus vesiculosus* Fabricius, 1794 by subsequent designation of Blanchard (1840), as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *vesiculosus* Fabricius, 1794 as published in the binomen *Syrphus vesiculosus* (specific name of the type species of *Brachystoma* Meigen, 1822);

- (4) to place on the Official List of Family Names in Zoology the name BRACHYSTOMATIDAE Melander, 1908 (type genus *Brachystoma* Meigen, 1822).

References

- Blanchard, C.E. 1840. Vol. III. Histoire naturelle des insectes. Orthoptères, névroptères, hémiptères, hyménoptères, lépidoptères et diptères. In: Laporte, F.L.N. de C., *Histoire naturelle des animaux articulés. Annélides, crustacés, arachnides, myriapodes et insectes*. 672 pp. Duménil, Paris. [26 December]
- Chvála, M. & Wagner, R. 1989. Family Empididae, pp. 228–336 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 6. Therevidae—Empididae. 435 pp. Elsevier Science Publishers, Amsterdam & Akadémiai Kiadó, Budapest.
- Collin, J.E. 1961. Empididae. In: British flies. Volume 6. 782 pp. University Press, Cambridge, U.K.
- Evenhuis, N.L. 1994. *Catalogue of the fossil flies of the world (Insecta: Diptera)*. 600 pp. Backhuys Publishers, Leiden.
- Fabricius, J.C. 1794. *Entomologia Systematica*, vol. 4. 472 pp. C.G. Proft, Hafniae.
- Loew, H. 1862. Diptera Americae septentrionalis indigena. Centuria secunda. *Berliner Entomologische Zeitschrift*, 6: 185–232.
- Meigen, J.W. 1822. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Dritter Theil. x, 416 pp. Schultz-Wundermann, Hamm.
- Melander, A.L. 1908 Family Empididae. Pp. 218–227 in Williston, S.W. *Manual of North American Diptera*. Third Edition. 405 pp. J.T. Hathaway, New Haven.
- O'Hara, J.E., Cerretti, P., Pape, T. & Evenhuis, N.L. 2011. Nomenclatural studies toward a world list of Diptera genus-group names. Part II: Camillo Rondani. *Zootaxa*, 3141: 1–268.
- Plant, A.R. 2010. *Brachystoma* Meigen (Diptera: Empidoidea: Brachystomatidae) new to the Oriental (Indo Malayan) Realm: A new species from Thailand. *Tropical Natural History*, 10(1): 61–66.
- Poole, R.W. 1996. Diptera. Pp. 15–604 in Poole, R.W. & Gentili, P. (Eds.), *Nomina Insecta Nearctica. A checklist of the insects of North America*. Volume 3: Diptera, Lepidoptera, Siphonaptera. 1143 pp. Entomological Information Services, Rockville, Maryland.
- Rondani, C. 1856. *Dipterologiae Italicae prodromus*. Vol: I. Genera Italica ordinis dipterorum ordinatim disposita et distincta et in familias et stirpes aggregata. 226, [2] pp. A. Stocchi, Parmae [= Parma].
- Sabrosky, C.W. 1999. Family-group names in Diptera. An annotated catalog. *Myia*, 10: 1–360.
- Sinclair, B.J. 1995. Generic revision of the Clinocerinae (Empididae), and description and phylogenetic relationships of the Trichopezinae, new status (Diptera: Empidoidea). *The Canadian Entomologist*, 127: 665–752.
- Smith, K.G.V. 1980. Family Empididae. Pp. 431–442 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1437 pp. British Museum (Natural History), London.
- Westwood, J.O. 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.). Pp. 125–154 in: *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects*. 158 pp. Longman, Orme, Brown, Green & Longmans, London.
- Yang D., Zhang K.-Y., Yao G. & Zhang J.-H. 2007. *World catalog of Empididae (Insecta: Diptera)*. vi, 599 pp. China Agricultural University Press, Beijing.

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Case 3566***Tropidolaemus* Wagler, 1830 and *Cophias wagleri* F. Boie, 1827 (currently *Tropidolaemus wagleri*) (Reptilia, Squamata, VIPERIDAE): proposed conservation**

Jay M. Savage

Department of Biology, San Diego State University, San Diego, CA 92182-4614, U.S.A. (e-mail: savy1@cox.net)

Patrick David

UMR 7205 OSEB, Reptiles & Amphibiens, Département Systématique et Évolution, Muséum National d'Histoire Naturelle, 57 rue Cuvier, F-75005 Paris, France (e-mail: pdavid@mnhn.fr)

Gernot Vogel

Society for Southeast Asian Herpetology, Im Sand 3, D-69115 Heidelberg, Germany (e-mail: gernot.vogel@t-online.de)

Abstract. The purpose of this application, under Articles 12 and 75.3 of the Code, is to conserve the long and continuing usage of the specific name *wagleri* for a Southeast Asian species of venomous snake by ruling that the specific name *Cophias wagleri* was established by F. Boie (1827). This would involve setting aside all previous usages of that name and designating a neotype. As originally proposed by Schlegel (1826) *Trigonocephalus* [*Cophias*] *wagleri* is a replacement name for *Coluber sumatranus* Raffles, 1822 but the Commission is now asked to rule that this name denotes a separate taxon. These actions are required to avoid synonymy between the two specific names and between the generic names *Tropidolaemus* Wagler, 1830 and *Parias* Gray, 1849.

Keywords. Nomenclature; taxonomy; Reptilia; Serpentes; *Parias*; *Tropidolaemus*; *Tropidolaemus wagleri*; *Trimeresurus* (*Parias*) *sumatranus*; snakes; Southeast Asia.

1. Raffles (1822, p. 334) described a new species of venomous snake from the island of Sumatra as *Coluber sumatranus*. It has been recognized as a valid species following Lidth de Jeude (1886, p. 44) and currently is usually referred to the viper genus *Trimeresurus* Lacépède, 1804, subgenus *Parias* Gray, 1849 (p. 11) (recognized as a genus by some authors).

2. Heinrich Boie was appointed curator at the *Rijksmuseum van Natuurlijke Historie te Leiden* (Royal Museum of Natural History, subsequently known as the National Natururhistorisch Museum and now as Naturalis) in 1821. He almost immediately began work on a large illustrated monograph entitled *Erpétologie de Java*, hereafter the *Erpétologie*, while awaiting his opportunity to initiate fieldwork in the Dutch East Indies. He finally left the Netherlands for Java in 1825 and died there

in 1827. H. Boie's *Erpétologie* and the watercolor figures that were to form accompanying plates were never published. A number of subsequent workers drew heavily upon them in their own publications, often using scientific names coined by Boie and in some cases copying his descriptions. Four early papers based to some extent or almost exclusively on the *Erpétologie* are Fitzinger (1826), Friedrich Boie (1826), Schlegel (1826a), Schlegel (1826b) and Friedrich Boie (1827). The last three are particularly significant in the present context. In the past there has been some confusion regarding the order of appearance of these publications. Meise & Hennig (1935) for Fitzinger (1826), Brongersma et al. (1966) for F. Boie (1826), and Savage & Myers (2006) for the others have established the chronology as follows: Fitzinger (prior to July 1 in 1826); F. Boie (after Fitzinger and before Schlegel, 1826a; probably no later than August, 1826); Schlegel (October for 1826a); Schlegel (by default December 31, 1826, for 1826b); F. Boie (1827).

3. Schlegel (1826a, p. 234) in his introduction states '(...) la direction du Musée royal des Pays-Bas a cru devoir me charger de donner dès à présent un extrait succinct de l'ouvrage de M. Boié.' Translation: '(...) the administration of the Musée royal des Pays-Bas [now Naturalis] considered it necessary to charge me with preparing the now already succinct extract from the work of M. Boie.' All of the new names in this extract are from the *Erpétologie* but most are nomina nuda. However, three snake species names are proposed as replacement names for previously described taxa as follows:

Brachyorrhos kuhlii (p. 236); a new replacement name for *Brachyura brachyurus* Kuhl (= *Coluber brachyurus* Kuhl, 1820) preoccupied by *Coluber brachiurus* Shaw, 1802 and a senior objective synonym of *Atractus trilineatus* Wagler, 1828. This name was suppressed by the Commission (Opinion 2210, BZN 65: 239–240) for the purposes of the Principle of Priority so as not to replace *Atractus trilineatus* Wagler, 1830;

Calamaria linnaei (p. 237); a new replacement name for *Coluber calamaria* (sic) Linnaeus, 1758; probably to avoid tautonymy; ruled by the Commission (Opinion 2196, BZN 65: 239) that it is not to be treated as a replacement name but as a new available name dating from its use in F. Boie (1827);

Cophias wagleri (p. 239); a new replacement name for *Coluber sumatranus* Raffles, 1822 in combination with the generic name *Trigonocephalus* (listed as *C.[ophias]* *sumatrensis* Raff.). These names are all proposed in the same format with the express purpose of establishing the usage of the H. Boie names over the names they are proposed to replace. The names from the *Erpétologie* are consequently listed first and followed by the replacements in parentheses. In all three cases the names are made available by bibliographic reference according to Article 12.2.1 of the Code.

4. Schlegel's (1826b) listing for *Cophias wagleri* (p. 239), the subject of this application, is: 'Gen.: TRIGONOCEPHALUS Oppel Esp. (...). M. Boié nomme ceux qui ont la tête entièrement écaillée *Cophias* Merr.[em]. Esp. (...). *C. Wagleri* Boié (*C. sumatrensis* Raff.)'. Translation: 'Gen.[us]: TRIGONOCEPHALUS Oppel Spec.[ies]: (...). Mr Boié named as *Cophias* Merr.[em] those which have the head entirely covered with [small] scales. Spec.[ies]: (...) *C. Wagleri* Boié (*C. sumatrensis* Raff.)'. The spelling of Raffles's specific name is a subsequent spelling as Raffles never described any species as *sumatrensis*. Schlegel's (1826b, col. 294) *Nachrichten* differs slightly in content and organization from the French version (1826a) but in nothing that affects

the current case. The citation in the German version is ‘*Cophias*. Sp.: (...) *Wagleri* Boie (*C. sumatrensis* Raff.)’. We follow McDiarmid et al. (1999, p. 345) in regarding Schlegel’s spelling of *sumatrensis* as an unjustified emendation because Schlegel demonstratively established his intent by using the emended spelling in two separate publications.

5. That it was Schlegel’s intent that all three names were replacement names is evidenced further by his using the three trivial names as the correct names for the detailed descriptions in his 1837 monograph of snakes in preference to the older names of Linnaeus (1758), Kuhl (1820), and Raffles (1822). It is as well to remember that in this era priority was not universally applied and authors, especially Schlegel (1837), frequently used younger names or coined new ones that they thought more appropriate than some older names as in this case. Specifically Schlegel (1837, p. 543) states in the description of *T. wagleri* ‘C’est aussi le COL. SUMATRANUS de Raffles (3);’ Translation: ‘It is also the Col. sumatranus of Raffles (3);’ and cites Raffles original (1820) publication of that name in the indicated footnote.

6. F. Boie (1827, col. 561) used the name *wagleri* again for a species of *Cophias* cited as follows: ‘*Cophias* (...) *Wagleri* H. Boie. *Erp. de Java*. Col. *Sumatranus* Raffles. *Seba* T II tab. 68 fig. 4’. Besides Raffles’s species and reference to H. Boie’s unpublished manuscript, F. Boie added a specimen depicted in Seba (1735) as belonging to this taxon.

7. In order to ascertain what was actually contained in Boie’s original manuscript of the *Erpétologie*, one of us (Vogel) examined it at Naturalis and made photocopies of the handwritten twelve line Latin description. The Latin description is not reproduced in Schlegel (1826a) or Schlegel (1826b). Furthermore, it does not appear as a translation into French in the 1826a paper or into German in the 1826b version. Similarly, neither the Latin description nor a translation of it appears in F. Boie (1827). Although Schlegel (1837, p. 543) cites plate 49 of the *Erpétologie* as being *Trigonocephalus wagleri* (= *Cophias wagleri*), this plate was never published and was not located in the Naturalis archives. Insofar as can be determined no specimens currently in the Leiden collections were among those described by H. Boie in his manuscript. However, H. Boie’s description without any doubt refers to the snake currently called *Tropidolaemus wagleri* (Vogel et al., 2007, p. 12) in having (Translation) ‘a bright green postorbital streak, body and tail above with black and yellow, black-edged parallel crossbars, below yellowish-green, sides dotted with green 140–140 [ventral scutes]+53–62 [subcaudal scutes].’ Inasmuch as H. Boie made no mention of *Coluber sumatranus* in his manuscript, Schlegel (1826a) is the person responsible for the nomenclatural act making *Cophias wagleri* available and under Art. 50.1 of the Code becomes the author of that name.

8. David & Vogel (1996, p. 170), David & Ineich (1999, p. 296), McDiarmid et al. (1999, p. 351) and Vogel et al. (2006, p. 7) regarded Schlegel’s (1826a) usage to be a nomen nudum as there was no diagnosis or description. However, only an indication such as a bibliographic reference, as in this case to Raffles (1822), is required to make a name available if published prior to 1931 under Article 12.2.1 of the Code.

9. Wagler (1830, p. 175) established the monotypic genus *Tropidolaemus* for ‘*Cophias wagleri* H. Boie, Isis, 1827, col. 561 (*Col. sumatranus* Raffl.)’. As we show in para. 7 above, the authorship of *C. wagleri* should be credited to Schlegel (1826a) but that has no bearing on the availability of *Tropidolaemus*. The combination

Tropidolaemus wagleri has been almost universally used for the Indo-Malayan pitviper (but absent from Java) called *Tropidolaemus wagleri* by Wagler since the generic name was resurrected by Burger (1971, p. 109). Prior to that time the species was referred to a number of nominal pitviper genera but usually to *Trimeresurus* Lacépède, 1804 (type species *Trimeresurus viridis* Lacépède, 1804 [a preoccupied name] now *Trimeresurus insularis* Karner, 1977).

10. David & Vogel (1996, p. 171) and David & Ineich (1999, p. 296) thought that the original proposal of a name for the species described and figured in the never published *Erpétologie* was by Wagler (1830, p. 130) when he established the monotypic genus *Tropidolaemus*. However, David & Vogel later in Vogel et al. (2007, p. 8) agreed with McDiarmid et al. (1999, p. 351) that the name *Cophias wagleri* was made available by F. Boie (1827). This was based on the conclusion that the Seba's (1735) figure cited in F. Boie's paper is of a different taxon than Raffles's species but was conspecific with the form currently called *Tropidolaemus wagleri*. As pointed out above this interpretation is not tenable as the name *Cophias wagleri* dates from Schlegel (1826a) not F. Boie (1827).

11. *Cophias wagleri* Schlegel, 1826 as a new replacement name for *Coluber sumatranus* Raffles, 1822 takes the same type specimen (Article 72.7) as Raffles's name and becomes a junior objective synonym of *Coluber sumatranus*, although it has its own author and date for purposes of synonymy and homonymy. Unfortunately, as F. Boie (1827) cannot be considered the describer of *Cophias wagleri*, the designation of a neotype (MNHN 1879.0708, Paris Museum, from the Bedagai River, Sumatra Barat Province, Sumatra, Indonesia) for *C. wagleri* by Vogel et al. (2007, p. 8) is invalid at this stage, as is their conclusion that the snake figured in Seba (1735) is a syntype. Nevertheless, the specimen they selected meets all other qualifying conditions under Article 75.3 for neotype designation.

12. McDiarmid et al. (1999, p. 346) and we ourselves have been unable to locate the holotype of *Coluber sumatranus* Raffles in any collection and it appears to be lost or destroyed. However, the description in Raffles (1820) provides enough detail to show that his snake is of a different species from the one currently called *Tropidolaemus wagleri*, which is the taxon described by H. Boie in the *Erpétologie* and named by Schlegel (1826a).

13. Schlegel's (1826a) subsequent spelling, *C.[oluber]* 'sumatrensis', as an unjustified emendation, has the same holotype as Raffles's *Coluber sumatranus* and is an available name with its own author and date (Schlegel, 1826) under Article 33.2.3 of the Code, but this does not affect the status of *C. wagleri*. That Schlegel was referring to the species described by Raffles is fully supported by the fact that F. Boie (1827) and Wagler (1830) as well as Schlegel (1837, pp. 542–543) all list Raffles's *sumatranus* as a synonym of *wagleri*.

14. As *Cophias wagleri* Schlegel, 1826 is a junior objective synonym of *Coluber sumatranus* Raffles, 1822, it follows that under the strict application of the Code the long used species name, currently in the combination *Tropidolaemus wagleri*, would be replaced by the available name *Tropidolaemus maculatus* (Gray, 1842, p. 48) for the species currently recognized as *Tropidolaemus wagleri*.

15. The above conclusion has additional nomenclatural ramifications. As noted above Wagler (1830) established a new genus, *Tropidolaemus*, for *Cophias wagleri* Schlegel, 1826, which must take as its sole included species the senior synonym

Coluber sumatranus Raffles. Currently *C. sumatranus* is usually assigned to the subgenus (or genus, according to some authors) *Parias* Gray, 1849 (type species: *Megaera flavamaculatus* Gray, 1842), along with four other species. Application of the Code, without relief through a ruling of the Commission, would require replacement of *Parias* with *Tropidolaemus* and the proposal of a new generic name for the five taxa usually referred to the latter genus, as *Tropidolaemus* has no synonyms.

16. Both *Coluber sumatranus* Raffles, 1822 and *Cophias wagleri* Schlegel, 1826 have been used under various generic names for two very different valid taxa from Lidth de Jeude (1886, p.43) onward and most recently have been placed in different genus-group taxa. Their synonymisation would seriously compromise the fundamental ideals of stability and universality of nomenclature espoused by the Code. In addition, that action would have a destabilizing effect on the genus-group names *Tropidolaemus* and *Parias*. Strict application of the Rules would also result in serious confusion of the identity of these dangerously venomous snakes which are widely reported in the medical literature on snakebite and in association with their specific antivenins.

16. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to rule that all usages of the name *Cophias wagleri* prior to F. Boie (1827) are unavailable;
 - (b) to rule that the nominal species *Cophias wagleri* (misidentified as *Coluber sumatranus*) shall not be treated as a replacement name but as a new available name published by F. Boie (1827);
 - (c) to set aside all type fixations for *Cophias wagleri* F. Boie (1827) prior to that by Vogel et al. (2007) of specimen MNHN 1879.0708 in Muséum national d'Histoire naturelle, Paris;
- (2) to place on the Official List of Generic Names in Zoology the name *Tropidolaemus* Wagler, 1830 (gender: masculine), type species by monotypy *Cophias wagleri* F. Boie, 1827 as ruled in (1)(c) above;
- (3) to place on the Official List of Specific Names in Zoology the name *wagleri* F. Boie, 1827, as published in the binomen *Cophias wagleri* (specific name of the type species of *Tropidolaemus*).

References

- Boie, F. 1827. Bermerkungen über Merrem's Versuch eines Systems der Amphibien, Marburg, 1820. Erste Lieferung: Ophidier. *Isis von Oken*, **20**: columns 508–566.
- Brongersma, L.D., Inger, R.F. & Marx, H. 1966. Proposed use of the plenary powers to conserve the generic name *Calamaria* Boie, 1827, and the specific name *Calamaria linnaei* Schlegel, 1837. (Reptilia, Serpentes). Z.N.(S.) 1114. *Bulletin of Zoological Nomenclature*, **22**(5/6): 303–313.
- Burger, W.L. 1971. *Genera of pitvipers (Serpentes: Crotalidae)*. Ph.D. Dissertation. 186 pp. University of Kansas, Lawrence, Kansas.
- David, P. & Ineich, I. 1999. Les serpents venimeux du monde: systématique et répartition. *Dumerilia*, **3**: 1–500.
- David, P. & Vogel, G. 1996. *The snakes of Sumatra: an annotated checklist and key with natural history notes*. 260 pp. Ed. Chimaira, Frankfurt am Main.

- Gray, J.E. 1842. Synopsis of the species of rattle-snakes, or family Crotalidae. *Zoological Miscellany*, **1**: 47–51.
- Gray, J.E. 1849. *Catalogue of the specimens of snakes in the collection of the British Museum*. xv, 125 pp. British Museum (Natural History), London.
- Kuhl, H. 1820. *Beiträge zur Zoologie und vergleichende Anatomie. Erste Abtheilung. Beiträge zur Zoologie*. 132 pp. Frankfurt am Main.
- Lidth de Jeude, van T.W. 1886. On *Cophias wagleri*, Boie, and *Coluber sumatranus*, Raffles. *Notes from the Leyden Museum*, **8**: 45–54.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- McDiarmid, R.W., Campbell, J.A. & Touré, T'S.A. 1999. *Snake species of the world: a taxonomic and geographic reference*. xi, 511 pp. Herpetologists League, Washington D.C.
- Raffles, T.S. 1822. Second part of the descriptive catalogue of a zoological collection made in the island of Sumatra and its vicinity. *Transactions of the Linnean Society of London*, **13**: 277–340.
- Schlegel, H. 1826a. Notice sur l'erpétologie de l'île de Java; par M. Boié (Ouvrage manuscrit). *Bulletin des Sciences Naturelles et Géologie. (Section II, Bulletin Universel des Sciences Naturelles de Férussac)*, **9**: 233–240.
- Schlegel, H. 1826b. Erpetologische Nachrichten. *Isis von Oken*, **20**: columns 281–284.
- Schlegel, H. 1837. *Essai sur la physionomie des serpens*, vol. 2. 606 pp. J. Kips, J.Hz. & W.P. Van Stokum, La Haye.
- Seba, A. 1735. *Locupletissimi Rerum Naturalium Thesauri Accurata Descriptio, et Iconibus Artificiosissimus Expressio, per Universam Physices Historiam. Opus, cui, in hoc Rerum Genere, Nullum Par Existit. Ex Toto Terrarum Orbe Collegit, Digessit, Descripsit, et Depingendum Curavit. Tomus II*. 154 pp., 114 pls. JanssonioWaesbergios, J. Westenium & Gul. Smith, Amsterdam.
- Vogel, G., David, G.P., Lutz, M., Van Rooijen, J. & Vidal, N. 2007. Revision of the *Tropidolaemus wagleri*-complex (Serpentes: Viperidae: Crotalinae). I. Definition of included taxa and redescription of *Tropidolaemus wagleri* (Boie, 1827). *Zootaxa*, **1644**: 1–40.
- Wagler, J.G. 1830. *Natürliches System der Amphibien, mit vorangehender Classification der Säugethiere und Vögel*. vi, 354 pp. J.G. Gotta, München.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on the proposed conservation of *Haliplanella* Hand, 1956 (Anthozoa, Actiniaria) by suppression of *Haliplanella* Treadwell, 1943 (Polychaeta)
(Case 3493; see BZN 66: 312–316; 67: 166–167; 68: 204–205)

R.M.L. Ates

Gov. Flinckstraat 19, 1506LL Zaandam, the Netherlands
(e-mail: pseudocorynactis@zonnet.nl)

In response to the comment by Fautin & Daly (BZN 68: 204–205), I reiterate that the homonymy in question does not present a problem because *Haliplanella* Hand, 1956 will disappear in synonymy.

Contrary to the allegation by Fautin & Daly (BZN 68: 204), Hand (1956, pp. 190, 222) was fully aware that he created a genus containing species with or without catch tentacles when he moved the members of the genus *Aiptasiomorpha* (AIPTASIOMORPHIDAE), supposedly without catch tentacles, to the genus *Diadumene* (DIADUMENIDAE), supposedly with catch tentacles. Additionally, catch tentacles ‘may be lacking’ according to Hand’s (1956, p. 222) diagnosis of the monogeneric family DIADUMENIDAE and, in his description of *Diadumene franciscana*, Hand (1956, p. 236) even explicitly stated the absence of catch tentacles. Obviously, the presence or absence of these special tentacles could therefore not play a part in distinguishing between *Diadumene*, a genus containing species with or without catch tentacles, and *Haliplanella*, supposedly but not actually without catch tentacles. Hand (1956) thus established the genus *Haliplanella* and the family HALIPLANELLIDAE based on one character: the assumed presence of three types of nematocysts in its acontia. I repeat from den Hartog & Ates (2011, pp. 18–19) that this character is a nonexistent one. Not three, but two types of nematocysts are present in the acontia of *Diadumene luciae* (Verrill, 1898), ‘amastigophores’ merely being one of several minor categories of p-mastigophores or p-rhabdoids (= penicilli). See also Schmidt (e.g. 1972, p. 8), Manuel (1981, p. 134) and Den Hartog & Ates (2011) for further information.

In his usage of *Diadumene*, Hand (e.g. in Fautin & Hand, 2007, p. 182) apparently came to realize that not three, but two types of nematocysts are present in the acontia of *D. luciae*. This may also be obvious from the relevant statement in Fautin et al. (BZN 66: 314), implying that appeal 3493 was being made notwithstanding Hand’s change of opinion to the effect that ‘late in his life’ (cf. BZN 66: 314) he considered *Diadumene* the valid name rather than *Haliplanella*. Rodriguez et al. (2012, p. 9) deal the final blow to *Haliplanella* Hand, 1956 as their genetic research reveals that it ‘nests among species of *Diadumene*, as predicted by den Hartog (1987) and Manuel (1981)’. Actually, the reference to den Hartog (1987) is wrong as it does not mention *Haliplanella*. Possibly, they meant den Hartog (1978).

The well-marked fosse and parapet in *D. luciae* is a very relevant aspect of this matter indeed. Again, there might have been reason to suppress *Haliplanella* Treadwell, 1943 if the name *Haliplanella* Hand, 1956 were kept in use as did Manuel (1981/1988). Manuel (1981/1988, p. 134) saw no use for the family HALIPLANELLIDAE because he agreed with Schmidt (1972) that amastigophores are merely a subtype of p-mastigophores, leading to the conviction that only two types of nematocysts are present in the acontia of *D. luciae*. However, Manuel (1981/1988) used the argument of the well-marked fosse and parapet in *D. luciae* to maintain *Haliplanella*. That

character had already been considered and dismissed by Stephenson (1935, p. 204), see den Hartog & Ates (2011, p. 20).

Also, Fautin et al. (BZN 66: 314) claim *Tricnidactis errans* de Oliveira Pires, 1987 being placed in the family HALIPLANELLIDAE to strengthen their case. However, in the unlikely event that the name *Tricnidactis* would survive in its own family, a new name for that family would be necessary.

Consequently, Case 3493 will lead nowhere, just like Case 2192 was moot (vide BZN 66: 314). It is the conviction of den Hartog & Ates (2011, pp. 17–20) that the names *Haliplanella* and HALIPLANELLIDAE Hand, 1956 should disappear in synonymy based on the evidence brought forward by them. How suppressing *Haliplanella* Treadwell, 1943 to make way for a name that will disappear would ‘benefit the community’ (BZN 68: 204) is not clear to me. Instead, suppressing *Haliplanella* Treadwell, 1943 gives the wrong signal to ‘the community’ that the name *Haliplanella* Hand, 1956 may have a chance to survive. Stability of names in zoology will not benefit.

Additional references

- Fautin, D.G. & Hand, C. 2007. Anthozoa (Hexacorallia). Pp.173–184 in Carlton J.T. (Ed.), *The Light and Smith manual: intertidal invertebrates from Central California to Oregon*. 4th Ed. Light, Smith & Carlton.
- Hartog, J.C. den & Ates, R.M.L. 2011. Actiniaria from Ria de Arosa, Galicia, northwestern Spain, in the Netherlands Centre for Biodiversity Naturalis, Leiden. *Zoologische Mededelingen*, Leiden, **85**: 11–53.
- Rodriguez, E., Barbeitos, M., Daly, M., Gusmao, L.C. & Häussermann, V. 2012. Toward a natural classification: phylogeny of acontiate sea anemones (Cnidaria, Anthozoa, Actiniaria). *Cladistics*, **1**: 1–18.

Comment on *Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by designation of a neotype
(Case 3532; see BZN 68: 41–46, 205; 69: 56–59)

Philippe Bouchet

Muséum National d'Histoire Naturelle, 55 rue Buffon, 75007 Paris, France
(e-mail: pbouchet@mnhn.fr)

Bruce Marshall

Museum of New Zealand / Te Papa Tongarewa, P.O. Box 467, Wellington, New Zealand (e-mail: brucem@tepapa.govt.nz)

The lectotype of *Murex tubercularis* designated and figured by Marshall (1978) is a whitish shell and its protoconch has a sculpture of axial riblets; this lectotype corresponds to the concept of *Cerithiopsis barleei* of Jeffreys and all subsequent British authors. However, we believe that this specimen belongs to the ‘elegant subpellucid white variety’ mentioned by Montagu (1808 p. 116) in his Supplement to *Testacea Britannica*, and not to the original 1803 material described as ‘chestnut-

brown'. Only the latter material would have been eligible as lectotype. The authors of the present comment thus view Marshall's (1978) lectotype designation as invalid.

This being said, we share Prkić et al.'s concern (BZN 69: 56–59) that the shell differences that separate European species of *Cerithiopsis* are so subtle that historical material is useless when it comes to selecting types that fulfill their name-bearing function, a situation lamented by Bouchet & Strong (2010). The nomenclature of European CERITHIOPSIDAE ought to be stabilized by taking advantage, whenever feasible, of designating neotypes that are also sequence-bearing specimens, i.e. hologenophores in the sense of Pleijel et al. (2008). We thus do not support the neotype designation advocated by Cecalupo & Robba.

Additional references

- Bouchet, P. & Strong, E. 2010. Historical name-bearing types in marine molluscs: an impediment to biodiversity studies? Pp. 63–74 in A. Polaszek (Ed.), *Systema Naturae 250*. CRC Press, London.
- Pleijel P., Jondelius, U., Norlinder, E., Nygren, A., Oxelman, B., Schander, C., Sundberg, P. & Thollesson, M. 2008. Phylogenies without roots? A plea for the use of vouchers in molecular phylogenetic studies. *Molecular Phylogenetics and Evolution*, 48: 369–371.

Comment on *Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE): request for a ruling on the availability of the generic name
(Case 3518; see BZN 68: 97–104, 282–292)

Francisco Welter-Schultes

Zoologisches Institut, Berliner Strasse 28, D-37073 Goettingen, Germany
(e-mail: fwelter@gwdg.de)

Cédric Audibert

Muséum, Centre de Conservation et d'Etude des Collections, 13A rue Bancel, 69007 Lyon, France (e-mail: cedric.audibert@cernuelle.com)

Helix aspersa is one of the most important species of terrestrial gastropod. If we accept hits in Google as a criterion for importance in public life, *Helix aspersa* is currently in the third position after *Helix pomatia* and *Cepaea nemoralis* (second position in Google Scholar after *H. pomatia*).

The request for a ruling is absolutely justified. We have two species involved in this case, not only one: *Helix aspersa* Müller, 1774 and *Helix aperta* Born, 1778. *Helix aperta* is an important southern European species. It occurs mainly in Italy, parts of southeastern France, and was introduced to Greece, Turkey, Cyprus and northern Africa where it constitutes today an important part of the local fauna. *Helix aperta* was deliberately introduced to Crete in the Roman epoch 2000 years ago as an edible snail, and until the last century it had some commercial value on local markets. *Helix aperta* is one of the three terrestrial gastropod species which has a local vernacular name in almost every village in Crete.

Acceptance and success of the Commission's decision will have to do with the genus-species combinations of these two species. The case would be of secondary importance if we were only talking about subgenera.

The phylogenetic background allows three possible classifications currently regarded as correct by different research teams: (1) *pomatia*, *aspersa* and *aperta* in the genus *Helix*, (2) *pomatia* in *Helix*, *aspersa* and *aperta* together in one single separate genus, (3) all three in separate genera. This means that three generic names are needed.

Some words on the recent history of the confusion. *Helix aspersa* was almost uniquely called *Helix aspersa* from 1774 until 1988/1990. Likewise the name *Helix aperta* was used in this form between 1778 and 1990. The trouble with these two species began only around 1990 when subgenera were raised to genera. In an important and comprehensive book on European non-marine molluscs Falkner (1990, p. 244) used *Cryptomphalus* for *aspersa*, *Cantareus* for *aperta*. Shortly afterwards several authors argued that *Cornu* had precedence. At the same time others began to use *Cantareus* as the generic name for *aspersa* and *aperta*. The availability of *Cornu* has remained under permanent dispute.

The result is the unfortunate situation that in real life *aspersa* is currently known under four different correct generic names (*Helix*, *Cornu*, *Cryptomphalus*, *Cantareus*), *Helix aperta* under two correct generic names (*Helix*, *Cantareus*). *Cornu* would also be correct for *aperta* but until today nobody has combined *aperta* with *Cornu*. *Helix aperta* is mainly an Italian species and Italian authors have rejected the use of *Cornu*.

In fact outdated names will vanish only very slowly, and that incorrect declensions are also used (*Cornu aspersa*, *Cornu aspersus* and other incorrect forms). Incorrect forms are frequent because in the four genera all three genders are involved, and both names *aspersa* and *aperta* are declinable adjectives of the *-us/-al/-um* model. *Cornu* is neuter. Being of neuter gender and not ending in *-um* is a shortcoming because the experience tells us that not all users can see this easily and form the correct ending of the specific name. *Cornu* looks rather like a masculine word. The masculine genders of *Cantareus* and *Cryptomphalus* are easier to see for the non-expert.

In his application Cowie (BZN 68: 97–104, 2011) mentioned that some modern malacological authors have continued to classify *aspersa* in *Helix*, for various reasons. In our recent checklist of French molluscs (Welter-Schultes et al., 2011) we classified *aspersa* in *Helix* because we think a separate genus is not really necessary. The decision to elevate subgenus to genus in 1990 was subjective and not based on results of new studies. The differences between the *pomatia* group and *aspersa* were known long before.

The importance of the species for the broad public does not originate in malacological research. *Helix aspersa* serves as an important model organism in molecular, physiological and ecological studies. In these studies the name *Helix* is used much more frequently. The contact zones between malacological taxonomy and the other disciplines are not broad so the literature has only little overlap.

The following Google hits (general search engine, accessed from Germany) were obtained in August 2009 and February 2011, the Google Scholar hits in February 2011. In combination with the specific name *aspersa* (*aspersus/aspersum*) the following proportions for genus-species combinations were obtained (usages of subgeneric

names were discounted, the total numbers of hits were displayed as fantasy values totalling several 100,000):

Google 2009: *helix* 85 %, *cornu* 9 %, *cantareus* 5 %, *cryptomphalus* 0.5 %, incorrect endings 1 %.

Google 2011: *helix* 88 %, *cornu* 7 %, *cantareus* 2 %, *cryptomphalus* 1.3 %, incorrect endings 1.5 %.

Google Scholar “since 2008”: *helix* 88 %, *cornu* 7 %, *cantareus* 4 %, *cryptomphalus* 1 %.

Google Scholar “anytime”: *helix* 96 %, *cornu* 2 %, *cantareus* 1 %, *cryptomphalus* 1 %.

The numbers were certainly slightly biased, but the general trend cannot be neglected. Google Scholar also counted literature citations in scientific publications and names that were only cited and not used. If the date of publication is ignored (“anytime”), Google Scholar counted also publications from before 1990 when the only option was *Helix*. Even if we consider all shortcomings known to be associated with the Google method (Lawrence et al., 2010, another shortcoming is that Russian and Ukrainian sources are too rarely included), the figures do still suggest that *Helix* is still by far the most commonly used generic name in the public and in scientific contexts.

If Cowie’s proposal to regard *Cornu* as available is accepted, we have the following effects:

Correct names:

aspersa: *Helix*, *Cornu* (2 genders)

aperta: *Helix*, *Cornu*, *Cantareus* (3 genders)

Real life:

aspersa: *Helix*, *Cornu*, *Cryptomphalus*, *Cantareus* (3 genders)

aperta: *Helix*, *Cornu*, *Cantareus* (3 genders)

If Cowie’s proposal is rejected (and *Cornu* unavailable), we have the following effects:

Correct names:

aspersa: *Helix*, *Cryptomphalus*, *Cantareus* (2 genders)

aperta: *Helix*, *Cantareus* (2 genders)

Real life:

aspersa: *Helix*, *Cornu*, *Cryptomphalus*, *Cantareus* (3 genders)

aperta: *Helix*, *Cantareus* (2 genders)

Accepting would result in only two genera and two genders for *aspersa*, and three genera with three genders for *aperta*, including one additional genus and gender for *aperta* that had not been used before. Rejecting would result in three genera and two genders for *aspersa*, two genera and two genders for *aperta*, all of which have been used before. From this point of view there seems more benefit in rejecting the proposal than in accepting it.

We add one more point to take into consideration. Although many malacologists have accepted the use of *Cornu*, especially those of the central and western European teams, it seems that after 20 years of dispute, most important malacological research teams from Italy, Ukraine and Russia (Manganelli, Salomone & Giusti, 2005, p. 504; Sverlova, 2006; Egorov, 2008; Sysoev & Schileyko, 2009) have not accepted the use

of *Cornu*. The fact that Italian authors have largely rejected *Cornu* is the reason why *Cornu* has nowhere yet been used for *Helix aperta*.

For these reasons we see no benefit in the use of *Cornu*, which would create unnecessary confusion in the Italian species *Helix aperta*. Not regarding *Cornu* as available would probably be the best solution.

Additional references

- Egorov, R. 2008. *Treasure of Russian shells. Supplement 5. Illustrated catalogue of the recent terrestrial molluscs of Russia and adjacent regions*. 179, [1] pp. Moscow.
- Falkner, G. 1990. *Binnenmollusken*. Pp. 112–280 in Fechter, R. & Falkner, G., Weichtiere. Europäische Meeres- und Binnenmollusken. *Steinbachs Naturführer*, **10**: 1–288.
- Lawrence, T., Pelkey, N. & Soares, S. 2010. Comment on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*) (Reptilia, Testudines). *Bulletin of Zoological Nomenclature*, **67** (3): 246–254.
- Sverlova, N.V. 2006. O rasprostraneniі nekotorykh vidov nazemnykh mollyuskov na territorii Ukrainy. *Ruthenica*, **16**: 119–139.
- Sysoev, A. & Schileyko, A. 2009. *Land snails and slugs of Russia and adjacent countries*. 312 pp., 142 figs. Pensoft, Sofia.
- Welter-Schultes, F., Audibert, C. & Bertrand, A. 2011. Liste des mollusques terrestres et dulcicoles de France continentale (excl. hydrobioides). *Folia Conchyliologica*, **12**: 4–44.

Comment on *Limax fasciatus* Razoumowsky, 1789 (LIMACIDAE) and *Limax fasciatus* Nilsson, 1823 (currently *Arion fasciatus*, ARIONIDAE: proposed conservation of both specific names (Gastropoda, Stylommatophora) (Case 3569; see BZN 68: 253–256)

Francisco Welter-Schultes

Zoologisches Institut, Berliner Strasse 28, D-37073 Goettingen, Germany
(e-mail: fwelter@gwdg.de)

The request is fully justified. *Arion fasciatus* is an important name and it would be useful to protect it in the form proposed by the authors of this case. The primary homonymy very probably does not provoke any confusion.

Comment on the proposed emendation of the current spelling of METINAE Simon, 1894 (Arachnida, Araneae, TETRAGNATHIDAE) to METAINEAE to remove homonymy with METIDAE Boeck, 1872 (Crustacea, Copepoda) (Case 3541; see BZN 68: 262–266).

Otto Kraus

Zoologisches Institut & Zoologisches Museum, Universität Hamburg, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany
(e-mail: otto.kraus@zoologie.uni-hamburg.de)

I support the application by Alvarez-Padilla & Hormiga to emend the spider family group name to METAINEAE.

Comments on the proposed conservation of usage of the specific name of *Scarabaeus fimetarius* Linnaeus, 1758 (currently *Aphodius fimetarius*; Insecta, Coleoptera, SCARABAEIDAE) by designation of a neotype
(Case 3579; see BZN 69: 29–36)

(1) Hans Fery
Räuschstrasse 73, Berlin, Germany (e-mail: hanfry@aol.com)

The Commission is asked to turn down the application of Angus et al. (BZN 69: 29–36) in part, because the name *Aphodius fimetarius* in the sense of the applicants is not in current usage as claimed by them, and their proposed neotype designation would seriously threaten the stability of nomenclature. The Commission is asked to set aside Wilson’s (2001) lectotype designation for *Scarabaeus fimetarius* Linnaeus, 1758, and to designate a neotype for this taxon other than that of the applicants. A neotype for *Aphodius cardinalis* Reitter, 1892 is designated. The Commission is asked to suppress all the names which might be considered senior subjective synonyms of *A. cardinalis*.

First it must be specified what is meant by the name *Aphodius fimetarius* in the present Comment, because this name might be understood in two totally different meanings: (a) in the sense of the huge majority of authors since 1758 and (b) in the sense of Angus et al. (BZN 69: 29–36). In the application the name *A. fimetarius* is used in a sense which is exactly contrary to the sense of almost all authors since 1758 (cf. more details in 1.1), and the reader might be totally misled when reading it (cf. Table 1).

Wilson (2001) showed that *Aphodius fimetarius*, as used until that time, included two different species. Whitehead (2006) was the first who clearly stated that one of these species has ‘deep red elytra’ (called by him *A. pedellus* (De Geer, 1774)) and the other one ‘yellowish-red elytra’ (called by him *A. fimetarius*) and he used for his key to species the elytral colour together with the other morphological characters given by Wilson (2001). Rößner [2012] studied several thousand specimens from large parts of the Holarctic and Australia and also distinguished two species, however he attributed the name *A. fimetarius* to the species with red elytra. Additionally, he found that the species with the red elytra (which can sometimes show slight tendencies to yellowish-red) has a more northern distribution and that the species with the yellowish-red elytra (which can sometimes become a somewhat darker red,

Table 1. A brief summary of the diverse usages of the names *A. fimetarius*, *A. pedellus* and *A. cardinalis*

usage	species with red elytra; more northern distribution in Europe	species with yellowish-red elytra; more southern distribution in Europe
as used for more than 250 years by a large majority of authors	<i>Aphodius fimetarius</i> (in part) (syn. <i>Aphodius pedellus</i>)	colour var. of <i>A. fimetarius</i> <i>A. cardinalis</i> (by Reitter, 1892)
as used by Angus et al. (BZN 69)	<i>Aphodius pedellus</i>	<i>Aphodius fimetarius</i>
usage proposed in the present Comment	<i>Aphodius fimetarius</i> (syn. <i>Aphodius pedellus</i>)	<i>Aphodius cardinalis</i>

but never as red as in the other species) has a more southern distribution (details in Rößner [2012]), e.g. the latter species does not occur in Sweden. I will call the former species the one ‘with red elytra’ or the ‘red species’. This species is called *Aphodius pedellus* by Wilson (2001) and Angus et al. (BZN 69). The other species will be called the one ‘with yellowish-red elytra’ or the ‘yellowish-red species’. This is the species which Whitehead (2006) and Angus et al. (BZN 69) call *Aphodius fimetarius* (Linnaeus, 1758). It is likely that this species has been described under some other names, such as *Aphodius nodifrons* Randall, 1838, *Aphodius fimetarius* var. *subluteus* Mulsant, 1842, and *Aphodius cardinalis* Reitter, 1892 (see paragraph 2.2). I avoid the phrase ‘*A. fimetarius* sensu Wilson (2001)’ because Wilson on the one hand meant a species with red elytra, but on the other hand unfortunately used the name in three different senses—her lectotype (= *A. foetens*), her paralectotypes (= the red species), and her karyotypes for *A. fimetarius* (= the yellowish-red species).

1. General considerations for rejection of the Application

The Commission should not vote in favour of the neotype proposed by Angus et al. (BZN 69: 34) because the proposal of the applicants is not in accordance with one of the most important recommendations of the Code (cf. Preamble and Appendix B): it by no means promotes the stability of nomenclature.

Wilson (2001) discovered through chromosomal studies the existence of two different species within the widespread taxon *Aphodius fimetarius*. This fact seems to be beyond any doubt, because it is confirmed by the study of the external and male genital morphology, and by the results of molecular studies (personal communication by R. Angus).

Thus, the main intention of the application—to eliminate possible confusion by fixing the name-bearing types—has my full support. However, it is quite unwarranted that a species with mostly yellowish-red elytra shall get the name of a species which is generally accepted as having red elytra, and this all in spite of the fact that an available name exists for the yellowish-red species (i.e. *A. cardinalis*, see below).

1.1. The proposed neotype for *A. fimetarius* is not in accordance with the original description

The specific name *fimetarius* for the red species has been in use for about 250 years (Linnaeus, 1758, p. 348: ‘elytris rubris’), and it has never been questioned that *A. fimetarius* is typically a species with red elytra (not even Wilson 2001 doubted it, since the different coloration of the two species is not discussed at all in her paper).

One might argue that whenever the name *A. fimetarius* was used in the period before Wilson (2001) both the red species and the yellowish-red species were included, so that the name *A. fimetarius* could be applied to the yellowish-red species without problems. This might be formally correct, however it contradicts the real understanding of the name *A. fimetarius* of almost all authors. Whenever authors studied *fimetarius* specimens with more yellowish elytra, they treated these specimens as more or less unimportant colour varieties or morphs at best. In the two single cases that the colour was given more attention, these yellowish-red specimens were described as new species (*A. cardinalis* and presumably *A. nodifrons* (‘bright reddish’ elytra); see 2.2) and by this the authors confirmed indirectly that their understanding of

A. fimetarius was that of a species with red elytra. I am also convinced that even Wilson herself never would have proceeded as she did if she had studied more material and recognised that the more southern species usually has yellowish-red elytra, while the more northern one has distinctly red elytra—then she certainly would have tried to find another name for the southern species and leave the name *fimetarius* for the northern one (thus leaving *A. pedellus* a junior subjective synonym of *A. fimetarius*).

Finally, I want to emphasise that even the applicants themselves do not question that (a) ‘Linnaeus described *S. fimetarius* as having a black body and red elytra’ BZN 69: 34, paragraph 4) and (b) there are no yellowish-red specimens among the original syntypes in the Linnean collection (Angus et al., BZN 69: 31, paragraph 6).

1.2. The proposed meaning of specific names is not in accord with the prevailing usage

With respect to the usage of the names involved, the entire period since Linnaeus’ description of *Scarabaeus fimetarius* must be considered; however, the period since the publication of Wilson (2001) is of particular interest. The applicants imply that the use of the name *A. pedellus* for the red species and the name *A. fimetarius* for the yellowish-red species have already been broadly accepted (in ‘current usage’; cf. the title and the Abstract of the application). They list 19 works of authors who have done so. However, the authors of five of these works by no means follow this usage unreservedly: M. Dellacasa & G. Dellacasa (2006) gave both names, but noted ‘DA’ (= doubtful assignment) under their entry for the distribution of *A. pedellus*. Elsewhere M. and G. Dellacasa followed Bordat (2002) and published/co-authored at least six articles/books after 2005 in which they mentioned only *A. fimetarius*, without giving the name *A. pedellus*, or if giving it, then only as a junior subjective synonym of *A. fimetarius* (see G. Dellacasa & M. Dellacasa, 2006; Cabrero Sañudo et al., 2007; Skelley et al., 2007; Dellacasa et al., 2010; Cabrero Sañudo et al., 2010; Carpaneto et al., 2011). Rößner (2006) discussed the situation on the basis of M. Dellacasa & G. Dellacasa (2006), but by no means fully adopted the view of Whitehead (2006) and that of the applicants. Gordon & Skelley (2007) discussed the situation of both taxa in northern America, but followed ‘the conservative approach’ and considered them all to be *A. fimetarius*. Roslin & Heliovaara (2009) considered it clear that there were two different species, but they were unable to explain unambiguously the external morphological differences and were not sure about the distribution of both species in Finland (personal communication by O. Biström). Forshage (2010) is merely a book review of M. Dellacasa & G. Dellacasa (2006), where Forshage gave a one-sentence comment on both taxa.

Angus et al. (BZN 69: 30) include in their argumentation only ‘those authors who have recognised that the former *A. fimetarius* comprises two species’; however, this is absolutely inadmissible, because, according to the letter and spirit of the ICZN, all the authors who have published on this species complex must be taken into account. Several colleagues placed at my disposal about 2100 references to publications which deal in some way with *A. fimetarius*, *A. pedellus* and other related names (see e.g. the list of synonyms in M. Dellacasa & G. Dellacasa, 2006, p. 113). Several works published before 2001 and about 85% of the works published after 2000 have been checked by me, but some were not at my disposal. In these cases I trust in the competence of my colleagues. The study of these references shows that in the period

from 2001 until today only 31 works follow the opinion of Angus et al. while 317 works do not. A list of these 348 recent references has been lodged with the Secretariat. According to the Glossary of the Code the prevailing usage of a name is defined as ‘that usage of the name which is adopted by at least a substantial majority of the most recent authors concerned with the relevant taxon, irrespective of how long ago their work was published.’ The literature shows that the name *A. fimetarius* has been in prevailing usage for the ‘red species’ for more than 250 years since its description, in more than 2050 works. Before 2001 it was used by ca. 850 authors. In the last decade, on the other hand, the usage of the names *A. fimetarius* and *A. pedellus* in the sense of Whitehead (2006) and the applicants only reaches just over 10% of all publications in 2006 (6 works), 2009 (4 works) and 2010 (4 works), and only a tiny minority of about 25 authors (less than 6%) accepted their interpretation of both taxa, while about 420 authors in the last decade did not do so. Thus, the view of Angus et al. can by no means be called ‘adopted by at least a substantial majority of authors’ and is definitely not in prevailing usage.

2. A better solution to this nomenclatural problem

In view of Wilson’s (2001) inappropriate choice of lectotype for *A. fimetarius* a neotype is needed which should correctly be a specimen with red elytra (see 2.1). At the same time, we no longer have any fixed name-bearing specimen for the species with the yellowish-red elytra which Angus et al. called *A. fimetarius*, and which is necessary for a complete understanding of this species complex. For this reason a neotype for this species is also designated (see 2.2).

2.1. Proposed neotype designation for *A. fimetarius*

The applicants proposed as a possible neotype a chromosomally defined specimen because both species showed overlapping variation in their diagnostic morphological characters. Whitehead (2006) concluded that both species under consideration could be separated with the aid of a x10 lens. Similar observations have been made by E. Rößner (personal communication; see also Rößner, [2012]): the morphological characters sometimes show tendencies to overlap, however, this is never the case with all characters in a single specimen. Thus, if all characters are taken into consideration the misidentification of a specimen is practically impossible. This may require some experience but this is not unusual in entomology. Actually, there is no need to use a chromosomally determined specimen for a neotype. Chromosomally defined specimens are available only from a few localities (see Wilson, 2001) which are different from the primary type localities (Sweden and Germany; see Angus et al. BZN 69: 29) of *A. fimetarius*. This is why I prefer to use morphologically determined specimens for neotype designations. In this case the neotype of *S. fimetarius* can be chosen from the remaining paralectotypes according to Recommendation 75A of the Code.

Three surviving paralectotypes are stored in the Linnean Collection under the numbers LIN 3382, LIN 3383 and LIN 3386. Photographs of these specimens can be found online (Linnean Society, 2012). All belong to the species with red elytra. LIN 3382 is additionally labelled *A. fimetarius* by Wilson (meaning the species with yellowish-red elytra), although Angus et al. (BZN 69: 31) corrected this misidentification after the specimen was cleaned. LIN 3383 bears no other label. LIN 3386 bears

no paralectotype label, but a label 'Aphodius pedellus (DeGeer), C.J. Wilson det. 2001' (meaning the species with red elytra). This is why we can be sure that this paralectotype is the 'true' *S. fimetarius*, the species with the red elytra.

2.2 Neotype designation for *A. cardinalis*

With respect to the yellowish-red species I find four taxa have been described which might be considered to fit the characters of this species: (a) *Scarabaeus bicolor* Geoffroy in Fourcroy, 1785 (p. 9) which is, however, a primary junior homonym of *Scarabaeus bicolor* Fabricius 1775 (p. 15) and thus permanently invalid; (b) *Aphodius nodifrons* Randall, 1838 (p. 20) is usually treated as a junior subjective synonym of *A. fimetarius*. It has been described from Maine (USA) and has 'bright reddish' elytra. According to Angus et al. (BZN 69: 30–31), both the species with red elytra and the one with yellowish-red elytra occur in North America. Thus the possibility cannot be excluded that Randall's species is the one with yellowish-red elytra. Nothing is known to me about the syntypes studied by Randall (M. Dellacasa, 1988, p. 169; Horn et al., 1990 do not list the name of Randall's taxon). A possible source for the whereabouts of Randall's types might be Sprague (1871); however, I have not been able to find this paper. On the other hand, according to Sprague (1875, p. 374), Randall's collection must be considered lost. Austin (in Sprague, 1875, p. 383) synonymised the taxon with *A. fimetarius*; (c) *Aphodius fimetarius* var. *subluteus* Mulsant, 1842 (p. 187) has been described only with the words 'élytres d'un jaune rouge' (elytra reddish-yellow). The type locality was not given explicitly, but according to the title of the work this is presumably France. M. Dellacasa (1988, p. 204) gives '?Algeria', possibly because Algeria in Mulsant's time was considered to be part of France. The name *subluteus* is available as a species group name (Article 45.6.4). According to Paulian (1944) Mulsant's type material—often said to be stored in the 'Collège Sainte-Marie de Saint-Chamond (Loire)'—must be considered lost with respect to *subluteus*; (d) *Aphodius cardinalis* Reitter, 1892 (p. 185) was described in detail as distinct from *A. fimetarius* (the red species) in a key to species. The description and the distribution provided strongly suggest that this is the species with the yellowish-red elytra. Reitter (1892, p. 186) gave Syria, Algeria and Andalusia (Spain) as the type locality of *A. cardinalis* and added 'gemein' (= common) for Syria. Thus, this author must have had several specimens at his disposal, these all being syntypes. According to Horn et al. (1990, p. 323) parts of the Reitter collection, which might have included SCARABAEIDAE, came to the Hungarian Natural History Museum, Budapest (HNHM), and eventually via Emmerich Reitter (son of Edmund) to the National Museum Prague. The answers to the enquiries made by E. Rößner to both museums (and also to the Museum für Naturkunde Berlin and the Zoologische Staatssammlung München) were, however, negative, and thus it must be assumed that all syntypes of *A. cardinalis* are lost (personal communication from E. Rößner).

The description of *A. cardinalis* is the most precise and the one which fits best the characters of the species with yellowish-red elytra, and thus this taxon is preferred for the neotype designation proposed below. The possible two senior subjective synonyms *A. nodifrons* and *A. subluteus*, however, have priority and thus must be suppressed.

Accordingly I hereby designate as neotype for the nominal species *cardinalis* Reitter, 1892 (as published in the binomen *Aphodius cardinalis*) the following male



Fig. 1. *Aphodius cardinalis* Reitter, 1892, proposed neotype: A, habitus; B, parameres in lateral view; C, labels.

specimen: '31.12.[19]83 Cádiz, Vejer d. l. Front. [= Vejer de la Frontera], Rinderkot [= cowpat]' (handwriting Fery); on reverse 'Fery leg.' (stamp); 'A. fimetarius L.' (handwriting Fery); a rectangular red neotype label will be added. The specimen is glued on a card using the water-soluble gum Methylan. The aedeagus is glued behind the specimen. The length of the specimen is 7.2 mm, the maximum width 3.3 mm (Fig. 1). The specimen shows all morphological characters given by Wilson (2001, in part), Whitehead (2006) and Angus et al. (BZN **69**: 33) for their *A. fimetarius*, i.e. the species with yellowish-red elytra. The locus typicus of *A. cardinalis* will become: Spain, Cádiz province (Andalusia), SSE Vejer de la Frontera, NW Barbate, co-ordinates ca. 36.20N 5.90W (decimal notation). The specimen is stored in the collection Hans Fery in the Zoologische Staatssammlung München, Germany.

This neotype is necessary to clarify the taxonomic status of the nominal taxon *A. cardinalis* and its type locality (Article 75.3) and to fix a name-bearing specimen for the species with the yellowish-red elytra which Angus et al. call *A. fimetarius*. The characters which differentiate *A. cardinalis* from other taxa are given in the original description and in Whitehead (2006) under the name *A. fimetarius*.

3. Application to the International Commission on Zoological Nomenclature

The International Commission on Zoological Nomenclature is accordingly asked

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *fimetarius* Linnaeus, 1758, as published in the binomen *Scarabaeus fimetarius*, and to designate as neotype the specimen LIN 3386 in the Linnean Collection at Burlington House, London; the specimen is labelled 'Aphodius pedellus (DeGeer), C.J. Wilson det. 2001';
- (2) to use its plenary power to suppress the following names for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy:
 - (a) *subluteus* Mulsant, 1842, as published as *Aphodius fimetarius* var. *subluteus*;
 - (b) *nodifrons* Randall, 1838, as published in the binomen *Aphodius nodifrons*;
- (3) to place on the Official List of Specific Names in Zoology the names:
 - (a) *fimetarius* Linnaeus, 1758, as published in the binomen *Scarabaeus fimetarius*, and as defined by the neotype designated in (1) above;
 - (b) *cardinalis* Reitter, 1892, as published in the binomen *Aphodius cardinalis*, and as defined by the neotype designated herein;
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
 - (a) *subluteus* Mulsant, 1842, as published as *Aphodius fimetarius* var. *subluteus* and as suppressed in (2)(a) above;
 - (b) *nodifrons* Randall, 1838, as published in the binomen *Aphodius nodifrons* and as suppressed in (2)(b) above.

A summary of the various usages of the names in question is given in Table 1.

4. Advantages of the procedures proposed here

- (a) The stability of the nomenclature is not threatened, because *A. fimetarius* is understood as it essentially has been understood for the last 250 years.
- (b) The most well-known species of the genus, the one with the red elytra, still has the name *Aphodius fimetarius*.
- (c) The species with the yellowish-red elytra takes the name *A. cardinalis*, under which it was best described.
- (d) Possible senior synonyms of *A. cardinalis* are suppressed.

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Additional references

- Bordat, P.** 2002. A propos de quelques espèces d'aphodiens de la faune de France. *Le Coléoptériste, Paris*, **5**(2): 129–130.
- Cabrero Sañudo, F.J., Dellacasa, M., Martínez Morales, I. & Dellacasa, G.** 2007. Estado actual del conocimiento de los Aphodiinae mexicanos. *Monographías 3er Milenio, Zaragoza*, **7**: 69–92.
- Cabrero Sañudo, F.J., Dellacasa, M., Martínez Morales, I., Lobo, J.M. & Dellacasa, G.** 2010. Distribución de las especies de Aphodiinae en México. *Acta Zoológica Mexicana, Mexico City*, [NS] **26**(2): 323–399.
- Carpaneto, G.M., Piattella, E., Dellacasa, G., Dellacasa, M., Pittino, R. & Mazziotta, A.** 2011. The lamellicorn beetles of southern Sardinia (Coleoptera: Scarabaeoidea), pp. 353–387 in Nardi, G., Whitmore, D., Bardiani, M., Birtele, D., Mason, F., Spada, L. & Cerretti, P. (Eds.), Biodiversity of Marganai and Montimannu (Sardinia). *Research in the framework of the ICP Forests network. Conservazione Habitat Invertebrati*, **5**.
- Dejean, P.F.M.A.** 1833. *Catalogue des coléoptères de la collection de M. le comte Dejean*. Livraisons 1 & 2. 176 pp. Méquignon-Marvis, Paris.
- Dellacasa, G., Dellacasa, M. & Mann, D.** 2010. The morphology of the labrum (epipharynx, ikrioma and aboral surface) of adult Aphodiini, and its implications for systematics. *Insecta Mundi, Gainesville*, **132**: 1–21.
- Dellacasa, M.** 1988. Contribution to a world-wide catalogue of Aegialiidae, Aphodiidae, Aulonocnemidae, Termitotrogidae. (part I). (1987). *Memorie della Società Entomologica Italiana, Genova*, **66**: 1–455.
- Geoffroy, E.L.** 1785. [new species] in Fourcroy, A.F.: *Entomologia Parisiensis; sive catalogus Insectorum, quae in agro Parisiensi reperiuntur*. viii, 544 pp. Aedibus Serpentineis, Paris.
- Horn, W., Kahle, I., Friese, G. & Gaedike, R.** 1990. *Collectiones entomologicae, ein Kompendium über den Verbleib entomologischer Sammlungen der Welt bis 1960*. Teil II: L–Z. pp. 223–573. Akademie der Landwirtschaftswissenschaften der DDR, Berlin.
- Linnean Society of London** 2012. The Linnean collection [photographs of *Scarabaeus fimetarius*]. http://www.linnean-online.org/cgi/search/advanced?screen=Public%3A%3AEPrintSearch&_action_search=1&_action_search=Search&q=&genus=&species=fimetarius&bio_order=&infra_species=&specimen_status=&collector=&coll_number=&coll_date=&specimen_identifier=&place_name=&locality=&country=&satisfyall=ALL&order=genus%2Fspecies%2F-date
- Mulsant, E.** 1842. *Histoire naturelle des coléoptères de France. Lamellicornes*. 623 pp., Maison Libraire, Paris.; Imprimerie de Dumoulin, Ronet et Sibuet, Lyon.
- Paulian, R.** 1944. Les types de Mulsant au Muséum de Paris. *Bulletin du Muséum National d'Histoire Naturelle*, (2)**16**(2): 117–121.
- Randall, J.W.** 1838. Description of new species of coleopterous insects inhabiting the State of Maine. *Boston Journal of Natural History*, **2**: 1–33.

- Reitter, E. 1892. Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen des palaearctischen Faunengebietes. *Verhandlungen des Naturforschenden Vereines in Brünn*, **30**: 140–262.
- Rößner, E. [2012]. *Die Hirschkäfer und Blatthornkäfer Ostdeutschlands (Coleoptera: Scarabaeoidea)*. Verein der Freunde und Förderer des Naturkundemuseums Erfurt e.V. (ISBN 978-3-00-036153-1; in press)
- Skelley, P.E., Dellacasa, M., Dellacasa, G. & Gordon, R.D. 2007. Checklist of the Aphodiini of Mexico, Central and South America. *Insecta Mundi, Gainesville* **14**: 1–14.
- Sprague, P.S. 1871. Randall's species, Coleoptera. *Boston Journal of Natural History*, **2**, 4 pp. [reference doubtful]
- Sprague, P.S. 1875. On the species of Coleoptera described by Mr. J. W. Randall. *Proceedings of the Boston Society of Natural History*, **17**(3): 373–385. [with notes by E.P. Austin, p. 383–385.]

(2) Axel Bellmann

Kirchlintelner Straße 7a, 28325 Bremen, Germany
(e-mail: axelbellmann@t-online.de)

Oliver Hillert

Kieferndamm 10, 15566 Schöneiche b. Berlin, Germany
(e-mail: o.hillert@yahoo.de)

Eckehard Rößner

Reutzstr. 5, 19055 Schwerin, Germany (e-mail: roessner.e@web.de)

The authors of Case 3579 try to find a solution for the nomenclatural problem caused by the choice of an *Aphodius foetens* (Fabricius, 1787) as lectotype for *Scarabaeus fimetarius* Linnaeus, 1758 by Wilson (2001). In this work Wilson demonstrated that the taxon which so far had been treated as *Aphodius fimetarius* (Linnaeus, 1758) consists in reality of two different species. After the publication of Wilson's paper, the *Aphodius* community was not really sure about how to identify the two species, because Wilson described in detail the chromosomal differences but gave external morphological characters which are difficult to observe and can not be verified unambiguously in all specimens. That is why some authors after 2001 interpreted Wilson's results to mean exactly the opposite (e.g. Dellacasa & Dellacasa, 2006). Other authors hesitated to follow Wilson's results (e.g. Gordon & Skelley, 2007).

One of us (E. Rößner) studied about 4500 specimens of both taxa from large parts of Europe, northern Africa, Middle Asia and Himalaya (a few also from Australia and USA) and came to the following conclusions:

- All specimens can be identified safely if all characters are given enough attention (colour of elytra, shape of elytral interstices, reticulation of elytral apex, shape and punctuation of head and pronotum, and shape of male parameres in lateral view).
- One of the species has a more northern distribution: Europe, most parts of Palearctic Asia (e.g. almost entire Asian Russia), including the Himalaya; in

America it is known from Alaska, Canada and mostly from the more northern states of the USA (including, however, Colorado and even Texas).

- The other species has a more southern distribution: southern Europe, parts of central Europe (where its range overlaps with that of the other species), Asia minor, Near East, parts of the Middle East; in America it is known only in more southern states of the USA (overlapping with the range of the other species in Colorado and Texas); introduced to Australia, where it is only known in the southern states.
- The more northern species has distinctly red, often dark red elytra, the more southern one lighter and more yellowish red elytra. In about 90% of all cases the species can be safely distinguished by the elytral colour alone. There is only a small overlap, but the southern species never has dark red elytra and the northern species never has light yellowish red elytra.

Wilson (2001) did not discuss at all the varying colours of the elytra of the species studied. In addition, she selected as lectotype a specimen of another species which has really distinctly red elytra. Thus, we assume that she believed that both of her taxa have red elytra. If Wilson had studied more specimens and realised that both species can be separated relatively safely by the elytral colour, then she possibly would have proceeded in exactly the opposite way and used other names for both species (and selected other lectotypes).

On the one hand, we support fully the essential result of Wilson's studies: the 'old' *A. fimetarius* consists of two different species. On the other hand, we strongly reject the intention of Wilson (2001) and that of the applicants to give the more southern species the name *A. fimetarius* and the more northern species the name *Aphodius pedellus* (De Geer, 1774).

The fact that Wilson (2001) has selected for *Scarabaeus fimetarius* a lectotype which does not belong to that species offers the opportunity to designate a new name-bearing type and, additionally, to find a satisfying solution for the confusion which came up over the last decade.

The solution intended by the application of Angus et al. (BZN 69: 29–36) is in strong contrast to the usage of the name *Aphodius fimetarius* not only over the last 250 years, but also over the last decade. As far as we know, almost all *Aphodius* specialists still treat *Aphodius fimetarius* as a species with red elytra. The authors named in the application as accepting the use of the names *A. fimetarius* and *A. pedellus* in the sense of Wilson (2001) are not at all representative of the vast majority of *Aphodius* specialists. If the Commission were to follow the suggestions of the applicants, the name *A. fimetarius* would apply to a species with yellowish red elytra. This proceeding would cause heavy confusion and considerably threaten nomenclatural stability.

We feel strongly that the neotype designation proposed by Angus et al. should not be approved by the Commission. If a neotype is to be proposed it should be a specimen with really red elytra and other characters which fit those given in Wilson (2001) for *A. pedellus* (sic!), and preferably it should be one of the remaining paralectotypes in the collection of Linné.

The advantages of these suggestions are:

- The essential result of Wilson's (2001) work (the existence of two species) is taken into account in an acceptable way.

- *Aphodius fimetarius* will remain the taxon it has been for the last 250 years since its description, i.e., a species with red elytra.
- *Aphodius pedellus* will retain the status it has had since shortly after its description – i.e. a junior synonym of *A. fimetarius*.
- In the future, the more southern species (with yellowish red elytra) can be given an available name, which should be selected from the known synonyms of *A. fimetarius* sensu lato (e.g. *Aphodius nodifrons* Randall, 1838, *Aphodius subluteus* Mulsant, 1842, *Aphodius cardinalis* Reitter, 1892, etc.).
- Considerable confusion among dung beetle specialists will be avoided and, thus, the stability of nomenclature will not be threatened at all.

(3) Tomas Roslin

Spatial Foodweb Ecology Group, Department of Agricultural Sciences, PO Box 27 (Latokartanonkaari 5), FI-00014 University of Helsinki, Finland
(e-mail: tomas.roslin@helsinki.fi)

I wholeheartedly support the course of action proposed in this case. It is necessary to avoid the application of the name *fimetarius* Linnaeus to *A. foetens* (Fabricius), as this would result in hopeless confusion for anyone working on these key species from an ecological perspective. As far as I understand, the course of action proposed by Angus et al. is in accordance with the Code and legitimate and would avoid unnecessary name changes.

That *fimetarius* and *pedellus* are separate species is abundantly clear from research on DNA (CO1 sequencing) carried out in my group, where the two taxa form distinct clusters in perfect concordance with karyotype information. Hence, designating as neotype a well-resolved specimen of an unambiguous taxon would be effective not only in avoiding an unnecessary name change, but also in resolving a tricky pair of cryptic species.

(4) Alexey Solodovnikov

Natural History Museum of Denmark, Universitetsparken 15, 2100 Copenhagen, Denmark (e-mail: asolodovnikov@snm.ku.dk)

Having read the case put forward by Angus et al (Case 3579) I support all of the authors' proposals. Given the subtle differences between the two species *Aphodius fimetarius* (Linnaeus) and *A. pedellus* (De Geer) and the unfortunate designation of a specimen of *A. foetens* (Fabricius) as a lectotype for *A. fimetarius* (Linnaeus), the setting aside of that lectotype and the designation of a carefully examined, chromosomally verified and well labelled specimen as a neotype of *Aphodius fimetarius* (Linnaeus) would eliminate a dangerous confusion. The proposed action seems reasonable because it fixes the identity of both species as they have been used in most of the literature. Given that both species seem rather common and are frequently cited in various ecological studies, any confusion between them is highly undesirable.

(5) Maxwell V. L. Barclay

Department of Entomology, Natural History Museum, London SW7 5BD, U.K.
(e-mail: m.barclay@nhm.ac.uk)

I am writing to register my full support for the proposals put forward by Angus, Wilson & Krell in Case 3579, and to offer further clarification and justification for this opinion.

Aphodius fimetarius (Linnaeus, 1758) sensu lato is a common and familiar dung beetle distributed in Europe, North Africa and Western Asia and introduced into Australia and the Americas. From the distinctive red elytra and black abdomen it is readily identifiable in the field. It is also the type species of *Aphodius*, one of the largest of all animal genera.

Wilson (2001), at that time a student of Robert Angus, recognised from study of chromosomes that *Aphodius fimetarius* sensu lato actually consists of two species, both common in southern Britain. Molecular evidence supports this split (J. Maté, pers. comm. 2005; T. Roslin pers. comm., 2011). In many, but not all, cases, the two species can be distinguished using morphological characters. I will refer to these two species as *fimetarius* #1 and *fimetarius* #2.

Linnaeus's original description of *fimetarius* is sufficiently general to encompass both species, as in his stated type locality 'Europe'. The type material on which the name was based almost certainly includes both *fimetarius* #1 and *fimetarius* #2 (the uncertainty because the description was partly based on dispersed or referred material which cannot be found, and because not all surviving specimens can be confidently distinguished on morphology, and are too old for chromosomal or molecular work). The next available name after *fimetarius* Linnaeus, 1758 is *pedellus* De Geer, 1774, and the type of *pedellus* is one of those specimens that can be confidently assigned to one of the species based on morphology, and corresponds clearly to Angus et al.'s *fimetarius* #2. Since the name *pedellus* De Geer could be linked to *fimetarius* #2, Wilson (2001) aimed to designate as lectotype of *fimetarius* one of the Linnaean syntypes that corresponded to *fimetarius* #1, so the 'first' species would be *A. fimetarius* (Linnaeus, 1758) and the 'second' species *A. pedellus* (De Geer).

Unfortunately, the Linnaean type series includes a third species, the third being *Aphodius foetens* (Fabricius, 1787), a superficially similar species with red elytra but with the abdomen also red (not black). Not expecting a third species, Wilson did not examine the undersides of the beetles while selecting her lectotype and since the upperside of *foetens* corresponds more closely to *fimetarius* #1 than to *fimetarius* #2, she regrettably selected the *foetens* specimen as lectotype of *fimetarius*. If this was allowed to stand it would cause nomenclatural chaos, because it would mean that *A. fimetarius* (Linnaeus) would be a senior synonym and thus the valid name of the beetle universally called *A. foetens* (Fabricius), a well known species of quite different ecology and distribution. This lectotype is therefore a major threat to stability, and needs urgently to be set aside.

To date, in post 2001 publications, the community has used *fimetarius* and *pedellus* as intended by Wilson (2001) unaware of her incorrect choice of lectotype, which was only recently noticed. Nobody has yet used the name *fimetarius* for the species universally known as *foetens*; it would be most desirable to resolve this situation before someone does use it this way.

If the lectotype is set aside as requested by Angus et al., a neotype will be required (since paralectotypes have no name-bearing status). While original material should ideally be preferred for a neotype, the uncertainty caused by the broad type locality 'Europe', the difficulty of reliably identifying old specimens, and the risk of new evidence emerging and altering morphology-based concepts in this group, would undermine the stability of any such neotype into the future. Angus et al. propose to circumvent these uncertainties by choosing a well localised modern neotype that has been verified based on chromosomes, and I strongly support their choice.

The proposal of Angus et al. supports the original intention of Wilson (2001) to refer to the two species formerly confused under *fimetarius* as *Aphodius fimetarius* (Linnaeus, 1758) and *A. pedellus* (De Geer, 1774). This system has been adopted by the vast majority of post-2001 workers that have acknowledged that two species are present.

As more data have become available on the distribution of the two species, which are sympatric and both common in England where the original study took place, it has become clear that to the south and west of Europe, *fimetarius* sensu stricto (sensu Angus et al.) is dominant, and to the north and east *pedellus* prevails. The fact that the two species are not fully sympatric throughout their range creates the possibility of conflict between local agendas. Since both populations were confused until 2001 under the name '*fimetarius*', it is likely that entomologists from the regions where one species dominates would prefer for 'their' species to retain the accustomed name '*fimetarius*' and for the 'other one' to have a different name. Inevitably, since it is not possible to call both species '*fimetarius*', one of the two groups of regional workers will ultimately be disappointed. It is fortuitous that the discoverers came from a country where both species occur, and so made the decision based on objective criteria. Their decision has been widely adopted in the subsequent 11 years, as shown by the list of references in their original application, and it would be very unfortunate for stability of the names if having started on this path any change was now made to the concepts of *pedellus* and *fimetarius* that Wilson (2001) established.

I think the case put forward by Angus, Wilson & Krell is very succinct and well argued, explaining the problems and setting out an admirable and satisfactory solution to them. I hope very much, in the interest of stability, that the Commission will vote in favour of the case.

Comment on the proposed designation of *Anaphes fuscipennis* Haliday, 1833 as the type species of *Anaphes* Haliday, 1833 (Insecta, Hymenoptera)
(Case 3554; see BZN 68: 122–126)

Guido Pagliano

Museo Regionale di Scienze Naturali di Torino, Via Giolitti 36, 10123 Torino Italy
(e-mail: guido.pagliano@tin.it)

With regard to the application of Huber et al., I agree that it is necessary to designate *Anaphes fuscipennis* Haliday, 1833 as the type species of *Anaphes* Haliday, 1833. This would be the best solution to avoid various nomenclatural changes that would be otherwise necessary.

Comment on *Anchisaurus* Marsh, 1885 (Dinosauria, Sauropodomorpha): proposed conservation of usage by designation of a neotype for its type species *Megadactylus polyzelus* Hitchcock, 1865

(Case 3561; see BZN 69: 44–50)

Vahe Demirjian

11 Canyon Terrace, Newport Coast, CA 92657 U.S.A.

(e-mail: vahedemirjian@cox.net)

I am writing in opposition to the proposal by Galton to conserve the name *Anchisaurus* Marsh, 1885. In a discussion of various phylogenetic hypotheses for the relationships of basal sauropodomorphs ('prosauiropods') Sereno (2007) claimed that the holotype of *Anchisaurus polyzelus* lacks autapomorphies to distinguish it from other basal sauropodomorphs (including the holotypes of *Ammosaurus major*, *Anchisaurus solus*, and *Yaleosaurus colurus*), effectively rendering *Anchisaurus* a nomen dubium and necessitating *Ammosaurus major* as the oldest available name for the basal sauropodomorph skeletons (YPM 1883, 208, 209) from the Early Jurassic strata of the United States Eastern Seaboard. However, Yates (2010) concluded that AM 41/109 shares two autapomorphies with the Manchester specimens (dorsoventrally flattened ischial blades with the long axis of the cross-section set at a low angle to the horizontal, and slender first sacral rib with a base occupying less than half of the length of the first sacral centrum) and subsequently revised the diagnosis of *Anchisaurus polyzelus*.

It is true that YPM 1883 (holotype of *Anchisaurus colurus*) forms much of the current concept of *Anchisaurus* as acknowledged by Galton, since it represents the most complete specimen of *Anchisaurus polyzelus* to date, but there are a number of problems with the proposals in Case 3561.

Firstly, the holotype of *Anchisaurus colurus* came from the Wolcott Quarry in Manchester, Connecticut, whereas AM 41/109 (the holotype of *Anchisaurus polyzelus*) was collected in Springfield, Massachusetts (Galton, 1976). Therefore, Galton's selection of YPM 1883 as the proposed neotype for *A. polyzelus* does not comply with Article 75.3.6 of the Code (i.e. evidence that the neotype came as nearly as practicable from the original type locality). If YPM 1883 is designated as the neotype, then *Anchisaurus colurus*, and thus the genus *Yaleosaurus* von Huene, 1932, would become junior objective synonyms of *A. polyzelus* and *Anchisaurus*, respectively.

Secondly, Galton's assertions of the non-diagnostic properties of AM 41/109 downplay the fact that another basal sauropodomorph specimen from Connecticut Valley (YPM 2125) is not conspecific with any of the known specimens of *Anchisaurus* (Yates 2004, 2010). Regardless of whether or not it lacks autapomorphies to distinguish it from basal members of the Anchisauria Galton & Upchurch, 2004 (sensu Yates 2007), the characters cited by Yates (2010) as unique to *Anchisaurus* not only distinguish AM 41/109 from other basal sauropodomorphs (including YPM 2125) but are also found only in the Manchester specimens (YPM 1883, 208, 209).

As a side note, Yates (2004) pointed out that while the holotype of *Ammosaurus major* (YPM 208) is conspecific with other specimens of *Anchisaurus* in the proximal width-total length ratio of the metatarsals (0.66 in YPM 208 versus 0.62 in YPM 1883

and 0.60 in YPM 209), specimens from the Navajo Sandstone of Arizona that were previously referred to *Ammosaurus* cf. *major* by Galton (1976) are not conspecific with any of the known specimens of *Anchisaurus* but instead represent non-anchisaurian basal sauropodomorphs, with UCMP 82961 being probably related to *Massospondylus carinatus* and MNA G27233 being assignable to Sauropodomorpha indet. Likewise, basal sauropodomorph specimens from Nova Scotia that were referred to cf. *Ammosaurus* sp. by Shubin et. al. (1994) need to be re-examined to determine whether they are conspecific with *Anchisaurus polyzelus* or represent a distinct taxon.

In summary, the proposals in Case 3561 should be rejected because: (1) the holotype of *Anchisaurus polyzelus* (AM 41/109) comes from a different locality from that of YPM 1883 (holotype of *Anchisaurus colurus*); and (2) YPM 2125 is not conspecific with any known specimens of *Anchisaurus* (Yates 2004, 2010) and the diagnostic characters seen in YPM 1883 and other specimens from Manchester, Connecticut are present in AM 41/109 as demonstrated by Yates (2010).

Additional references

- Galton, P.M. 1976. Prosauropod dinosaurs (Reptilia: Saurischia) of North America. *Postilla*, **169**: 1–98.
- Sereno, P.C. 2007. Basal Sauropodomorpha: historical and recent phylogenetic hypotheses, with comments on *Ammosaurus major* (Marsh, 1889). *Special Papers in Palaeontology*, **77**: 261–289.
- Shubin, N.H., Olsen, P.E. & Sues, H.D. 1994, Early Jurassic small tetrapods from the McCoy Brook Formation of Nova Scotia Canada. Pp. 242–250 in Fraser, N.C. & Sues, H.D. (Eds.), *In the Shadow of the Dinosaurs*. Cambridge University Press.
- Yates, A.M. 2004. *Anchisaurus polyzelus* (Hitchcock): the smallest known sauropod dinosaur and the evolution of gigantism amongst sauropodomorph dinosaurs. *Postilla*, **230**: 1–58.
- Yates, A.M. 2007. The first complete skull of the Triassic dinosaur *Melanorosaurus* Haughton (Sauropodomorpha: Anchisauria). *Special Papers in Palaeontology*, **77**: 245–260.
- Yates, A.M. 2010. A revision of the problematic sauropodomorph dinosaurs from Manchester, Connecticut and the status of *Anchisaurus* Marsh. *Palaeontology*, **53**: 739–752.

OPINION 2296 (Case 3525)***Tricoelia variopedata* Renier, [1804] (currently *Chaetopterus variopedatus*; Annelida, Polychaeta): specific name conserved**

Abstract. The Commission has conserved the widespread current usage of the polychaete name *Chaetopterus variopedatus* by ruling that it is available from Renier [1804b], despite the fact that this work was officially unpublished.

Keywords. Nomenclature; taxonomy; Polychaeta; CHAETOPTERIDAE; *Chaetopterus variopedatus*; Adriatic.

Ruling

- (1) Under the plenary power it is hereby ruled that the specific name *variopedata*, as published in the binomen *Tricoelia variopedata* Renier, [1804b], is available from Renier [1804b].
- (2) The name *Chaetopterus* Cuvier, 1830 (gender: masculine), type species by monotypy *Chaetopterus pergamentaceus* Cuvier, 1830, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *variopedata* Renier, [1804b], as published in the binomen *Tricoelia variopedata* Renier, [1804b], ruled to be an available name in (1) above;
 - (b) *pergamentaceus* Cuvier, 1830, as published in the binomen *Chaetopterus pergamentaceus* Cuvier, 1830 (specific name of the type species of *Chaetopterus* Cuvier, 1830).
- (4) The entry for Renier, [1804b] in the Official Index of Works in Zoology is hereby amended to record that the name *variopedata*, as published in the binomen *Tricoelia variopedata* Renier, [1804b], is available from Renier [1804b], as ruled in (1) above, and that *Cerebratulus marginatus* Renier, 1804, *Polycitor crystallinus* Renier, 1804 and *Tubulanus polymorphus* Renier, 1804 are available as ruled in Opinions 477, 478 and 486).

History of Case 3525

An application to conserve the widespread current usage of the name *Chaetopterus variopedatus*, and amend the entry for Renier [1804b] in the Official Index of Works in Zoology, was received from Alexander I. Muir (*The Natural History Museum, London, U.K.*) and Mary E. Petersen (*Darling Marine Center, University of Maine, Walpole, Maine, U.S.A.*) on 24 May 2010. After correspondence the case was published in BZN 67: 279–284 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 281–282. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 22: Alonso-Zarazaga, Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Štys.

Kullander split his vote, voting AGAINST proposals 1–3 and FOR proposal 4.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Voting FOR, Fautin commented that she was not persuaded by the concern that there were undescribed species because the name in question had been applied to a species complex. That would be a taxonomic concern, not a nomenclatural issue. She felt that granting the appeal of the petitioners would clear the way for the name to be used in taxonomy so the complex could be sorted out. She also noted a typographical error in paragraph 8, which states that paragraph 8 should be consulted, whereas paragraph 7 was meant.

Voting AGAINST, Štys said he generally did not favour unnecessary nomenclatural interventions prior to understanding taxonomy. The application explained that the name *Tricoelia variopedata* Renier, 1804 was in infrequent use for an unresolved complex of species. He noted that there was no information about any name-bearing type of the species name, whether extant, existing in the past or prospective – so he felt it unnecessary to put the name on the List when its application was in no way fixed and did not seem to be intended to be fixed, especially when it came from a suppressed work. Štys felt that if the authors of the application were right, then the species names used in recent papers on the species would change in most cases anyway.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- Chaetopterus* Cuvier, 1830, *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée*, Nouvelle édition, vol. 3, Déterville & Crochard, Paris, p. 208.
- pergamentaceus*, *Chaetopterus*, Cuvier, 1830, *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée*, Nouvelle édition, vol. 3, Déterville & Crochard, Paris, p. 208.
- variopedata*, *Tricoelia*, Renier, [1804b], *Prospetto della classe dei vermin*, p. 18.

OPINION 2297 (Case 3514)**ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera): spelling emended to ENHYDRUSINI to remove homonymy with ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE)**

Abstract. The Commission has removed the homonymy between the family-group ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera) and ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE) by emending the stem of the name of the type genus *Enhydrus* Laporte, 1834, to give the beetle family-group name ENHYDRUSINI, while leaving the mammalian name, based on *Enhydra* Fleming, 1822, unchanged.

Keywords. Nomenclature; taxonomy; Mammalia; MUSTELIDAE; LUTRINAE; ENHYDRINI; *Enhydra*; Insecta; Coleoptera; GYRINIDAE; GYRININAE; *Enhydrus*; otters; whirligig beetles.

Ruling

- (1) Under the plenary power it is hereby ruled that for the purposes of Article 29 of the Code the stem of the generic name *Enhydrus* Laporte, 1834 is *Enhydrus-*.
- (2) The entry on the Official List of Generic Names in Zoology for the name *Enhydrus* Laporte, 1834 is hereby emended to record that for the purposes of Article 29 of the Code the stem of the generic name *Enhydrus* Laporte, 1834 is *Enhydrus-*.
- (3) The name ENHYDRUSINI Régimbart, 1882, type genus *Enhydrus* Laporte, 1834 (spelling emended by the ruling in (1) above) (Insecta, Coleoptera) is hereby placed on the Official List of Family-Group Names in Zoology.
- (4) The name ENHYDRINI Régimbart, 1882 (spelling emended to ENHYDRUSINI, as ruled in (1) above) (Insecta, Coleoptera) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3514

An application to remove the homonymy between the family-group names ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera) and ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE) which are homonyms resulting from similarity of the names of their respective type genera, *Enhydrus* Laporte, 1834 and *Enhydra* Fleming, 1822, by emending the stem of the name of the type genus *Enhydrus* Laporte, 1834, to give the beetle family-group name ENHYDRUSINI, while leaving the mammalian name, based on *Enhydra* Fleming, 1822, unchanged, was received from Hüseyin Özdikmen (*Department of Biology, Gazi University, 06500 Ankara, Turkey*) and Mustafa C. Darilmaz (*Department of Biology, Aksaray University, Aksaray, Turkey*) on 4 February 2010. After correspondence the case was published in BZN 67: 285–288 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 287. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 23: Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: Alonso-Zarazaga.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Alonso-Zarazaga submitted a conditional vote, which reverted to a negative based on the outcome of the vote. He explained that Bouchard et al.'s (2011) list of coleopteran family-group names noted that ENHYDRINI was used at the tribal level because of a reversal of precedence under Article 35.5 to conserve it over DINEUTINI Desmarest, 1851. He felt that this was done because the spelling ENHYDRINI was more familiar to users, but noted that this was against the Principle of Priority. Alonso-Zarazaga noted that if the proposals in Case 3514 were supported, the name of the tribe would be ENHYDRUSINI, a name that was not as familiar and in fact would take several years to become widely known and accepted. Alonso-Zarazaga felt that the Principle of Priority should be reinforced because it was an objective principle that led to greater overall stability, and DINEUTINI should recover the tribal status over ENHYDRUSINI. He observed that one of the subtribes would be named ENHYDRUSINA. He wished to emphasise that while ENHYDRINI was a name in predominant use and had been given precedence over DINEUTINI based on Article 35.5, the replacement name ENHYDRUSINI, if accepted by the Commission, was to be considered in predominant use by mandate and would have the same prerogatives, even if no one had used it before. However, because Alonso-Zarazaga's request was not supportable in the current presentation of the proposals, his vote was recorded, at his request, as AGAINST.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- ENHYDRINI Régimbart, 1882, *Annales de la Société Entomologique de France*, (6)2: 391–392.
Enhydrus Laporte, 1834, *Études entomologiques, ou description d'Insectes nouveaux et observations sur leur synonymie*. Méquignon-Marvis, Paris, p.110.
ENHYDRUSINI Régimbart, 1882, *Annales de la Société Entomologique de France*, (6)2: 391–392.

OPINION 2298 (Case 3519)

***Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 (Insecta, Coleoptera, CHRYSOMELIDAE): usage conserved**

Abstract. The Commission has conserved the usage of the generic names *Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 by suppressing the name *Eumolpus* Illiger, 1798.

Keywords. Nomenclature; taxonomy; CHRYSOMELIDAE; EUMOLPINAE; *Eumolpus*; *Chrysochus*; *Bromius*; *Eumolpus ignitus*; *Bromius obscurus*; *Chrysomela praetiosa*; *Chrysochus asclepiadea*; leaf beetle.

Ruling

- (1) Under the plenary power:
 - (a) the name *Eumolpus* Illiger, 1798 and all uses of the name prior to that by Weber (1801) are suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy;
 - (b) all type species fixations for the genus *Eumolpus* Weber, 1801 prior to that of *Chrysomela ignita* Fabricius, 1787 by Hope (1840) are set aside.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Eumolpus* Weber, 1801 (gender: masculine), type species *Chrysomela ignita* Fabricius, 1787 by subsequent designation by Hope (1840), as ruled in (1)(b) above (Insecta, Coleoptera);
 - (b) *Chrysochus* Chevrolat in Dejean, 1836 (gender: masculine), type species *Chrysomela praetiosa* Fabricius, 1792 (a junior synonym of *Chrysomela asclepiadea* Pallas, 1773) by subsequent designation by Jacoby (1908) (Insecta, Coleoptera);
 - (c) *Bromius* Chevrolat in Dejean, 1836 (gender: masculine), type species *Chrysomela obscura* Linnaeus, 1758 by subsequent designation by Monros & Bechyné (1956) (Insecta, Coleoptera).
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *ignita* Fabricius, 1787, as published in the binomen *Chrysomela ignita* (specific name of the type species of *Eumolpus* Weber, 1801, as ruled in (1)(b) above) (Insecta, Coleoptera);
 - (b) *asclepiadea* Pallas, 1773, as published in the binomen *Chrysomela asclepiadea* (the valid specific name of the type species of *Chrysochus* Chevrolat in Dejean, 1836) (Insecta, Coleoptera);
 - (c) *obscura* Linnaeus, 1758, as published in the binomen *Chrysomela obscura* (specific name of the type species of *Bromius* Chevrolat in Dejean, 1836) (Insecta, Coleoptera).

- (4) The name *Eumolpus* Illiger, 1798 is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3519

An application to conserve the usage of the generic names *Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 by suppressing the name *Eumolpus* Kugelann in Illiger, 1798, was received from A.G. Moseyko (*Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia*), E. Sprecher-Uebersax (*Naturhistorisches Museum, Basel, Switzerland*) and I. Löbl (*Muséum d'histoire naturelle, Geneva, Switzerland*) on 3 March 2010. After correspondence the case was published in BZN 67: 218–224 (2010). The title, abstract and keywords of the case were published on the Commission's website. Case 3519 was originally sent for vote on 1 September 2011; the voting paper was cancelled following a request from a Commissioner, seconded by several other Commissioners, and the proposals modified to include in particular the following:

- the name *Eumolpus* Illiger requested to be suppressed for both the Principle of Priority and the Principle of Homonymy;
- the authorship 'Kugelann in Illiger, 1798' changed to 'Illiger, 1798';
- *asclepiadeus* Pallas, 1773 changed to *asclepiadea* Pallas, 1773.

No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals modified from those published in BZN 67: 220–221. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 18: Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lim, Minelli, Pape, Papp, Patterson, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 4: Alonso-Zarazaga, Bogutskaya, Kullander and Rosenberg.

Bouchet split his vote FOR: 1b, 2b, 2c, 3 and AGAINST 1a, 2a, 4. Zhang abstained.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Voting FOR, Grygier said he is not fully satisfied with the a priori acceptance in proposals (1)(a), (2)(b), and (3)(a) of the type species fixation for *Eumolpus* Weber by Hope (1840) under Article 67.7, as this fixation is explained in para. 5 of the Case. *Eumolpus* Weber, 1801 was not an available name in 1840, merely a later usage of Illiger's *Eumolpus*, and still now (at the time of voting) it is not an available name. It will not become available, and thus eligible to be the type species, until the Commission approves proposal (1)(a); Article 67.7 thus also cannot come into play until this proposal is approved, although it will then do so automatically. Grygier pointed out that if these proposals pass, the type species status of *Chrysomela ignita*, as it will come to be stated in the Official Lists, will indeed be correct, but only by ex post facto application of Article 67.7, not a priori. Grygier said that to make things perfectly clear, the Commission should have been asked to use its specific powers under Article 78.2.3 to confirm the type fixation explicitly as part of the package. Voting FOR, van Tol explained that his vote was only for the modified form of the

text. Also voting FOR, Yanega explained that while there were deficiencies in the application, as noted by other Commissioners, and while there was an alternative solution possible, the actions suggested in the application would resolve the issue in such a way as to maintain stability, even if not in the most elegant or desirable manner. He was more concerned with the end result being stable and timely than with its being closest to the ideal solution, and requiring a few more years to implement.

Bouchet SPLIT his vote, with the explanation that overall he voted FOR in order to not obstruct the result of the vote. However, he said he failed to see what was gained by attributing *Eumolpus* to Weber, 1801, rather than to its original author Illiger, 1798, with *Chrysomela ignita* Fabricius, 1787, fixed as type species under the plenary power.

Voting AGAINST, Rosenberg said there was no need to artificially erect the name *Eumolpus* Weber, 1801 which was merely a misidentification of *Eumolpus* Illiger, 1798. It would be preferable to set aside all previous fixations of type species for *Eumolpus* Illiger, 1798 and designate *Chrysomela ignita* Fabricius, 1787 as its type species.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- asclepiadea*, *Chrysomela*, Pallas, 1773, *Reise durch verschiedene Provinzen des Russischen Reichs. Zweyter Theil. Zweytes Buch vom Jahr 1771*. Kayserliche Akademie der Wissenschaften, St. Petersburg, p. 725.
- Bromius* Chevrolat in Dejean, 1836, *Catalogue des coléoptères de la collection de M. le Comte Dejean*. Deuxième édition [1833–1836]. Livraison 5. Méquignon-Marvis Pères & Fils, Paris, p. 412.
- Chrysochus* Chevrolat in Dejean, 1836, *Catalogue des coléoptères de la collection de M. le Comte Dejean*. Deuxième édition [1833–1836]. Livraison 5. Méquignon-Marvis Pères & Fils, Paris, p. 413.
- Eumolpus* Illiger, 1798, *Verzeichniss der Käfer Preussens*. Johann Jacob Gebauer, Halle, p. 498.
- Eumolpus* Weber, 1801, *Observationes entomologicae, continentes novorum quae condidit generum characteres, et nuper detectarum specierum descriptions*, Impensis Bibliopolii Academici Novi, Kiliae, p. 28.
- ignita*, *Chrysomela*, Fabricius, 1787, *Mantissa Insectorum, sistens eorum species nuper detectas: adjectis characteribus genericis, differentiis specificis, emendationibus, observationibus*, vol. 1. xx, Christ. Gottl. Proft., Hafniæ, p. 68.
- obscura*, *Chrysomela*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1. Salvii, Holmiae, p. 375.

OPINION 2299 (Case 3529)***Otiorhynchus* Germar, 1824 and *Loborhynchus* Schoenherr, 1823
(Insecta, Coleoptera): emendation of entries on the Official List of
Generic Names in Zoology**

Abstract. The Commission emended two entries on the Official List of Generic Names in Zoology: that for the genus *Otiorhynchus* Germar, currently stated to be dated 1824 with type species *Curculio clavipes* Bonndorff, 1785 but which is known to have been proposed by Germar in 1822 with type species *Curculio rhacusensis* Germar, 1822 by monotypy; and that for the genus *Loborhynchus* Schoenherr, 1823, whose authorship should be *Loborhynchus* Dejean, 1821.

Keywords. Nomenclature; taxonomy; Coleoptera; *Otiorhynchus*; *Loborhynchus*; *Curculio rhacusensis*.

Ruling

- (1) The name *rhacusensis* Germar, 1822, as published in the binomen *Curculio rhacusensis* (specific name of the type species of *Otiorhynchus* Germar, 1822), is hereby placed on the Official List of Specific Names in Zoology.
- (2) The entry on the Official List of Generic Names in Zoology for the genus *Otiorhynchus* is hereby emended as follows: *Otiorhynchus* Germar, 1822, *Fauna Insectorum Europae*, 7: no. 12 (gender: masculine) (type species by monotypy: *Curculio rhacusensis* Germar, 1822).
- (3) The entry on the Official Index of Generic Names in Zoology for the genus *Loborhynchus* is hereby emended as follows: *Loborhynchus* Dejean, 1821, *Catalogue de la collection de Coléoptères de M. le Baron Dejean*: 90 (type species not designated).
- (4) The entry on the Official List of Specific Names in Zoology for *Curculio clavipes* Bonndorff, 1785 is hereby emended to record that the name *Curculio clavipes* Bonndorff, 1785 is taken off the Official List.

History of Case 3529

An application to emend two entries on the Official List of Generic Names in Zoology: that for the genus *Otiorhynchus* Germar, currently stated to be dated 1824 with type species *Curculio clavipes* Bonndorff, 1785, while it is known to have been proposed by Germar in 1822, with type species *Curculio rhacusensis* Germar, 1822 by monotypy; and that for the genus *Loborhynchus* Schoenherr, 1823, whose authorship should be *Loborhynchus* Dejean, 1821, was received from Christopher H.C. Lyal (*Natural History Museum, London, U.K.*) and Miguel A. Alonso-Zarazaga (*Museo Nacional de Ciencias Naturales (CSIC), Madrid, Spain*) on 28 June 2010. After correspondence the case was published in BZN 67: 289–291 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 290. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Loborhynchus Dejean, 1821. *Catalogue de la collection de Coléoptères de M. le Baron Dejean*, p. 90.

Otiorhynchus Germar, 1824, *Insectorum species novae aut minus cognitae, descriptionibus illustratae*, vol. 1., J.C. Hendelii & Filii, Halae, p. 343.

rhacusensis, *Curculio*, Germar, 1822, *Fauna Insectorum Europae*, vol. 7. 25 nrs. Impensis Car. Aug. Kummelii, Halae, no. 12.

OPINION 2300 (Case 3530)

PLINTHINI Lacordaire, 1863 (Insecta, Coleoptera) and *Plinthus* Germar, 1817 conserved by designation of *Curculio megerlei* Panzer, 1803 as the type species

Abstract. The Commission has conserved the current usage of the weevil genus name *Plinthus* Germar, 1817 and the family-group name PLINTHINI Lacordaire, 1863 by ruling that *Curculio megerlei* Panzer, 1803 is an available name and designating it as the type species of *Plinthus* Germar, 1817.

Keywords. Nomenclature; taxonomy; PLINTHINI; *Plinthus*; *Tylotus*; *Curculio megerlei*; *Curculio meyerlaei*; weevil.

Ruling

- (1) Under the plenary power, the Commission has:
 - (a) ruled that the specific name *megerlei* Panzer, 1803, as published in the binomen *Curculio megerlei*, is available from its publication by Panzer (1803), with the endorsement that it is not to be taken as a misidentification of *Curculio meyerlaei* Fabricius, 1801;
 - (b) set aside all previous type fixations for *Curculio megerlei* Panzer, 1803 prior to that by Kippenberg (1981);
 - (c) set aside all previous type species fixations for the nominal genus *Plinthus* Germar, 1817, and designated *Curculio megerlei* Panzer, 1803, as ruled to be available in (1)(a) above, as the type species;
 - (d) set aside all previous type species fixations for the nominal genus *Meleus* Dejean, 1821, prior to the designation made by Faust (1886) of *Curculio megerlei* Panzer, 1803, as ruled to be available in (1)(a) above, as the type species;
 - (e) ruled that the family-group name PLINTHINI Lacordaire, 1863, is based on *Plinthus* Germar, 1817, as defined by the type species designation in (1)(c) above.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Plinthus* Germar, 1817 (gender: masculine), type species *Curculio megerlei* Panzer, 1803 as ruled in (1)(c) above;
 - (b) *Tylotus* Schoenherr, 1823 (gender: masculine), type species *Curculio chrysops* Herbst, 1797, by original designation.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *meyerlaei* Fabricius, 1801, as published in the binomen *Curculio meyerlaei* and as defined by the lectotype (one of two syntypes from the Fabrician Collection housed in the University Zoological Museum) designated by Alonso-Zarazaga, 2010 (BZN 67: 293);

- (b) *megerlei* Panzer, 1803, as published in the binomen *Curculio megerlei* (specific name of the type species of *Plinthus* Germar, 1817 and of *Meleus* Dejean, 1821, as ruled in (1)(c) and (1)(d) above);
- (c) *chrysops* Herbst, 1797, as published in the binomen *Curculio chrysops*, (specific name of the type species of *Tylotus* Schoenherr, 1823 and of *Tyloderes* Schoenherr, 1826).
- (4) The name PLINTHINI Lacordaire, 1863, type genus *Plinthus* Germar, 1817, is hereby placed on the Official List of Family-Group Names in Zoology.
- (5) The following names are hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology:
 - (a) *Meleus* Dejean, 1821 (a junior objective synonym of *Plinthus* Germar, 1817);
 - (b) *Tyloderes* Schoenherr, 1826 (a junior objective synonym of *Tylotus* Schoenherr, 1823).

History of Case 3530

An application to conserve the current usage of the weevil genus name *Plinthus* Germar, 1817 and the family-group name PLINTHINI Lacordaire, 1863 by ruling that *Curculio megerlei* Panzer, 1803 is an available name and designating it as the type species of *Plinthus* Germar, 1817, was received from Miguel A. Alonso-Zarazaga (*Museo Nacional de Ciencias Naturales (CSIC), Madrid, Spain*) and Christopher H.C. Lyal (*Natural History Museum, London, U.K.*) on 1 July 2010. After correspondence the case was published in BZN 67: 292–299 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 296–297. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- chrysops*, *Curculio*, Herbst in Jablonsky, 1797, *Natursystem aller bekannten in- und ausländischen Insekten...* (Der Käfer), part 7, p. 63.
- megerlei*, *Curculio*, Panzer, 1803, *Fauna Insectorum Germanicae Initia oder Deutschlands Insekten*, 87, Felssecker, Nürnberg, no. 7.
- Meleus* Dejean, 1821, *Catalogue de la collection de Coléoptères de M. le Baron Dejean*, Crevot, Paris, p. 88.
- meyerlaei*, *Curculio*, Fabricius, 1801, *Systema eleutheratorum secundum ordines, genera, species*, vol. 2. Bibliopoli. Academici Novi, Kiliae, p. 521.

PLINTHINI Lacordaire, 1863, Histoire naturelle des insectes. Genera des coléoptères, ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes, *Tome sixième*. Roret, Paris, p. 359.

Plinthus Germar, 1817, *Magazin der Entomologie*, **2**: 340.

Tyloderes Schoenherr, 1826, *Curculionidum dispositio methodica cum generum characteribus, descriptionibus atque observationibus variis seu Prodrum ad Synonymiae Insectorum, partem IV. x*, Fleischer, Lipsiae, p. 206.

Tylotus Schoenherr, 1823, *Isis von Oken*, **1823**(10): col. 1145.

OPINION 2301 (Case 3526)

***Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*; Osteichthyes, SALMONIDAE, SALMONINAE): specific name conserved**

Abstract. The Commission has conserved the specific name *Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) for an endemic landlocked salmon in Taiwan by suppression of the senior subjective synonym *Salmo saramao* Jordan & Oshima in Oshima, 1919.

Keywords. Nomenclature; taxonomy; SALMONIDAE; *Oncorhynchus formosanus*; *Oncorhynchus saramao*; salmon; Taiwan.

Ruling

- (1) Under the plenary power the name *saramao* Jordan & Oshima in Oshima, 1919, as published in the binomen *Salmo saramao*, is suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *formosanus* Jordan & Oshima 1919, as published in the binomen *Salmo formosanus*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The name *saramao* Jordan & Oshima in Oshima, 1919 as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3526

An application to conserve the specific name *Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) for an endemic landlocked salmon in Taiwan by suppression of the senior subjective synonym *Salmo saramao* Jordan & Oshima in Oshima, 1919, which has not been catalogued or used since publication of the original description, was received from Hsuan-Ching Ho (*Biodiversity Research Center, Academia Sinica, Nankang, Taipei, & National Museum of Marine Biology & Aquarium, Pingtung, Taiwan*) and Jin-Chywan Gwo (*Department of Aquaculture, Taiwan National Ocean University, Keelung, Taiwan*) on 21 June 2010. After correspondence the case was published in BZN 67: 300–302 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 301. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 19: Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Kullander, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 5: Alonso-Zarazaga, Bogutskaya, Kojima, Lim and van Tol.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Voting AGAINST, Alonso-Zarazaga said that since both nominal species had been described in the 20th century, he considered that the Principle of Priority should be followed. Also voting AGAINST, Kojima commented that even though *Salmo formosanus* Jordan & Oshima, 1919 (November) (or *Oncorhynchus formosanus*) had been used, while its senior synonym *Salmo saramao* Jordan & Oshima in Oshima, 1919 (June) had not been used since it was described, their nomenclatural relation was clear and use of *Salmo* (or *Oncorhynchus*) *saramao*, with *Salmo formosanus* as its junior synonym, would cause no nomenclatural confusion. On the other hand, if *Salmo saramao* were suppressed and someone designated as the neotype of *Salmo formosanus* a specimen not in accord with the current concept of *formosanus*, a complicated taxonomic problem might emerge. Also voting AGAINST, Tol said he felt that use of the name *saramao* Jordan & Oshima would not cause confusion.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

formosanus, *Salmo*, Jordan & Oshima, 1919 (November), *Proceedings of the Academy of Natural Sciences of Philadelphia*, **71**: 122.

saramao, *Salmo*, Jordan & Oshima in Oshima, 1919 (June), *Taiwan Nojiho*, **151**: 14.

OPINION 2302 (Case 3528)

***Ephippus* Cuvier, 1816, EPHIPPIDAE Gill, 1861, *Scatophagus* Cuvier, 1831 and SCATOPHAGIDAE Bleeker, 1876 (Osteichthyes): usage conserved**

Abstract. The Commission has preserved stability in the nomenclature and taxonomy of two families of marine fishes by designating *Chaetodon orbis* Bloch, 1787 as the type species of the genus *Ephippus*.

Keywords. Nomenclature; taxonomy; SCATOPHAGIDAE; *Scatophagus*; scats; EPHIPPIDAE; *Ephippus*; spadefishes; batfishes.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous fixations of type species for the nominal genus *Ephippus* Cuvier, 1816 are hereby set aside and *Chaetodon orbis* Bloch, 1787 is designated as the type species.
- (2) The name *Ephippus* Cuvier, 1816 (gender: masculine), type species *Chaetodon orbis* Bloch, 1787, as ruled in (1) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *orbis* Bloch, 1787, as published in the binomen *Chaetodon orbis* (specific name of the type species of *Ephippus* Cuvier, 1816, as ruled in (1) above), is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name EPHIPPIDAE Gill, 1861, type genus *Ephippus* Cuvier, 1816, is hereby placed on the Official List of Family-Group Names in Zoology.

History of Case 3528

An application to preserve stability in the nomenclature and taxonomy of two families of marine fishes by designating *Chaetodon orbis* Bloch, 1787 as the type species of the genus *Ephippus* was received from Maurice Kottelat (*Cornol, Switzerland and Raffles Museum of Biodiversity Research, National University of Singapore, Singapore*) on 18 June 2010. After correspondence the case was published in BZN 67: 303–306 (2010). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2011 the members of the Commission were invited to vote on the proposals published in BZN 67: 305. At the close of the voting period on 1 March 2012 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bouchet, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kottelat, Ng and Pyle were on leave of absence. No vote was received from Lamas.

Despite voting FOR, Štys said he took exception to paragraph 13 in the application. Out of Bleeker's (1876) three 'family-group names' Proteracanthiformes, Chaetodipteriformes and Plataciformes, the author of the application gives precedence to the family name PLATACIDAE Bleeker, 1876, acting as a first reviser. In the absence of any further information on Bleeker's treatment of suprageneric names Štys would argue that none of the three are family-group names according to the provisions of the Code and its Glossary; they are simply compound names that fall formally within categories of higher than family-group names not covered by the Code. Štys felt that even when such a compound name contained a genus-group name as its first part, there was still no ground to 'downgrade' such a name to a family-group level and use the genus name concerned as its name-bearing type.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Ephippus Cuvier, 1816, *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Tome II.* xvii, Deterville, Paris, p. 335.

orbis, Chaetodon, Bloch, 1787, *Naturgeschichte der Ausländischen Fische. Dritter Theil.* xii, p. 81, pl. 202, fig. 2.

EPHIPPIDAE Gill, 1861, *Proceedings of the Academy of Natural Sciences of Philadelphia*, **13** (Suppl.): 64.

OPINION 2297 (Case 3514). ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera): spelling emended to ENHYDRUSINI to remove homonymy with ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE) 145

OPINION 2298 (Case 3519). *Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 (Insecta, Coleoptera, CHRYSOMELIDAE): usage conserved. 147

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OPINION 2300 (Case 3530). PLINTHINI Lacordaire, 1863 (Insecta, Coleoptera) conserved and *Plinthus* Germar, 1817 conserved by designation of *Curculio megerlei* Panzer, 1803 as the type species 152

OPINION 2301 (Case 3526). *Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) (Osteichthyes, SALMONIDAE, SALMONINAE): specific name conserved 155

OPINION 2302 (Case 3528). *Ephippus* Cuvier, 1816, EPHIPPIDAE Gill, 1861, *Scatophagus* Cuvier, 1831 and SCATOPHAGIDAE Bleeker, 1876 (Osteichthyes): usage conserved 157

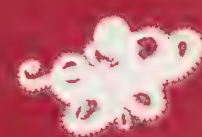
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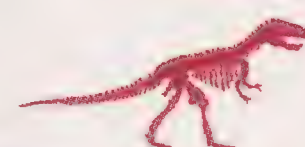
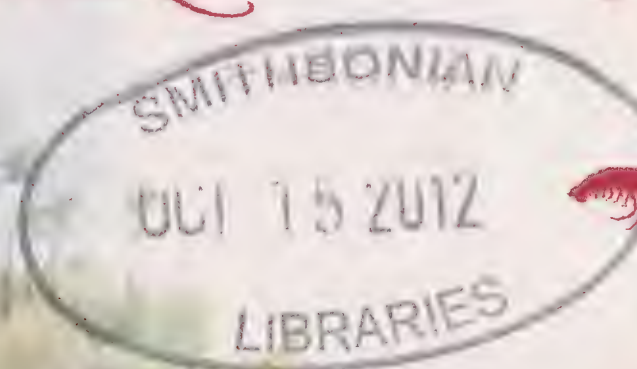
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The Executive Secretary

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

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Cover image: *Paradisaea rubra* Daudin, 1800, red bird-of-paradise, an endemic, near-threatened species from the north-west Papuan Islands of Waigeo, Batanta, Gemien and Saonek. The detail is from Plate 31 of John Gould's '*Birds of New Guinea*,' vol. 1 (1875–1888). (The original image is a colour lithograph © Natural History Museum, London). The inscription on the image says '*Paradisaea sanguinea* Shaw'. The name *Paradisaea sanguinea* Shaw, 1809 is a junior synonym of *Paradisaea rubra* Daudin, 1800. Note the correct spelling of the name *Paradisaea*, ruled upon by the Commission (the Opinion is published in BZN 69(1)).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 69, part 3 (pp. 159–246)

30 September 2012

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 69, part 2, 30 June 2012) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3597: *Eimeria lamporpeltisgetuli* Duszynski & Upton, 2009 (Currently *Eimeria lampropeltisgetuli*; Apicomplexa, EIMERIIDAE): proposed emendation of spelling. C.T. McAllister & D.W. Duszynski.

CASE 3598: *Thyone* Oken, 1815 and *Psolus* Oken, 1815 (Echinodermata, Holothuroidea): request for validation. G. Paulay & P.M. O'Loughlin.

CASE 3599: Proposed reinstatement of *Coluber caesius* Cloquet, 1818, suppressed by Opinion 328 (Reptilia, Squamata). D. Meirte.

CASE 3600: A proposal to reinstate as available the species-group names proposed for Devonian ammonoids (Mollusca, Cephalopoda) by Sobolew (1914a, 1914b). R.T. Becker & S.V. Nikolaeva.

CASE 3601: Proposed confirmation of validity of *Spracklandus* Hoser 2009 (Reptilia, Squamata). R. Hoser.

CASE 3602: *Coenosia* Meigen, 1826 and COENOSIINAE Verrall, 1888 (Insecta, Diptera, MUSCIDAE): proposed conservation of usage of the genus-group and family-group names. N.L. Evenhuis & A.C. Pont.

CASE 3603: *Ichthyophaga* Lesson, 1843 (Aves, Falconiformes, ACCIPITRIDAE), and *Ichthyophaga* Syromjatnikova, 1949 (Platyhelminthes, Turbellaria, URASTOMIDAE): proposed conservation of both generic names. E.H. Williams Jr. & L. Bunkley-Williams.

CASE 3604: F. Liberto & I. Sparacio. *Helix* (*Helicogena*) *aspersa insolida* Monterosato, 1892 (currently *Erctella insolida*; Gastropoda, Pulmonata, HELICIDAE): proposed conservation of the specific name.

CASE 3605: PHYCINAE Lyneborg, 1976 (Insecta, Diptera, THEREVIDAE): proposed emendation of spelling to remove homonymy with PHYCINAE Swainson, 1838 (Osteichthyes, Gadiformes, PHYCIDAE); and proposed conservation of *Phycis* Walbaum [ex Artedi], 1792 (Osteichthyes) by designation of *Blennius phycis* Linnaeus, 1766 as the type species. S.D. Gaimari, M. Hauser & R. Fricke.

Amendment of Articles 8, 9, 10, 21 and 78 of the *International Code of Zoological Nomenclature* to expand and refine methods of publication

International Commission on Zoological Nomenclature, c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K.
(e-mail: iczn@nhm.ac.uk)

Abstract. The International Commission on Zoological Nomenclature has voted in favour of a revised version of the amendment to the *International Code of Zoological Nomenclature* that was proposed in 2008. The purpose of the amendment is to expand and refine the methods of publication allowed by the Code, particularly in relation to electronic publication. The amendment establishes an *Official Register of Zoological Nomenclature* (with ZooBank as its online version), allows electronic publication after 2011 under certain conditions, and disallows publication on optical discs after 2012. The requirements for electronic publications are that the work be registered in ZooBank before it is published, that the work itself state the date of publication and contain evidence that registration has occurred, and that the ZooBank registration state both the name of an electronic archive intended to preserve the work and the ISSN or ISBN associated with the work. Registration of new scientific names and nomenclatural acts is not required. The Commission has confirmed that ZooBank is ready to handle the requirements of the amendment.

Keywords. Amendment; archiving; electronic publication; International Code of Zoological Nomenclature; Official Register of Zoological Nomenclature; ZooBank.

In 2008, the ICZN published a proposed amendment to the *International Code of Zoological Nomenclature*, 4th edition (ICZN, 1999), the primary aim of which was to define a mechanism by which electronic publication of new scientific names and nomenclatural acts could be permitted under the Code (BZN 65: 265–275). The key principles approved by the Commission for drafting the document were: 1) Electronic-only publications should be allowed, if mechanisms can be found that give reasonable assurance of the long-term accessibility of the information they contain; 2) Some method of registration should be part of the mechanism of allowing electronic publication of names and nomenclatural acts; 3) Physical works that are not paper-based (e.g. CD-ROMs, DVDs) should be disallowed (BZN 65: 266). The core principles of the amendment were approved by the International Union of Biological Sciences (IUBS, the governing body for ICZN) in their 2009 general meeting in Cape Town in agreement with Article 78.3 of the Code. Thereafter the details were extensively debated within the Commission, in online forums (especially Taxacom and the ICZN listservers), in the pages of the *Bulletin* (BZN volumes 66–67, all contributed comments available at <http://iczn.org/content/availability-electronic-publication>), at numerous taxonomic meetings and at an open meeting held in London on 29 October 2011 (summary published in BZN 68: 246–247).

A number of incremental votes were held within the ICZN Council and the Commission to develop consensus wording that satisfied many of the concerns raised during the discussion period. The main decisions reached in these votes were as follows:

- (1) The changes concerning electronic publication should be effective from the beginning of 2012.
- (2) The requirement for registration in ZooBank of new scientific names in electronic works was changed to a requirement for registration of the work itself.
- (3) The requirement that an electronic work be archived was changed to a requirement of intent to archive, with this requirement being satisfied by statement of the intended archive in ZooBank.
- (4) A requirement that an ISSN or ISBN (International Standard Serial Number or International Standard Book Number) be included in the ZooBank registration was added.
- (5) The period during which optical discs such as CD-ROM were acceptable media was changed from 'after 2000 and before 2010' to 'after 1985 and before 2013'.

In a three-month vote from 9 February to 9 May 2012 the Commissioners voted in favour of the revised amendment, pending a separate vote on the readiness of ZooBank. In a one-month vote from 1 August to 1 September 2012, Commissioners certified that ZooBank was fit for the purpose of handling the requirements of the amendment, thus clearing the last obstacle to allowing electronic publication under the *International Code of Zoological Nomenclature*. The ZooBank development team has established a robust architecture and work flow for registration. During extensive beta testing of ZooBank 3.0 over the last several months, they have demonstrated the ability to respond to problems reported and suggestions made by users. The Commission anticipates that ZooBank will continue to evolve in response to input from the broader community and encourages suggestions for its ongoing development. The text of the revised amendment is published here, with bracketed comments describing the changes from the fourth edition of the Code.

AMENDMENT

[Under Article 8 (what constitutes published work), Article 8.1.3 is modified to accommodate electronic publishing and an example is added. Former Article 8.4 is reformulated as the new 9.2, former Articles 8.5 and 8.6 are simplified and merged under the new Article 8.4, and new Articles 8.5 and 8.6 are introduced. The associated recommendations are revised.]

8.1. Criteria to be met. A work must satisfy the following criteria:

- 8.1.1. it must be issued for the purpose of providing a public and permanent scientific record,
- 8.1.2. it must be obtainable, when first issued, free of charge or by purchase, and
- 8.1.3. it must have been produced in an edition containing simultaneously obtainable copies by a method that assures

8.1.3.1. numerous identical and durable copies (see Article 8.4), or

8.1.3.2. widely accessible electronic copies with fixed content and layout.

Example: PDF/A (Portable Document Format Archive), described by ISO Standard 19005–1:2005, is a file format that allows content and layout to be preserved unchanged.

[Articles 8.2 and 8.3 are unchanged.]

8.4. Works issued as physical copies. Printing on paper and optical disc are the only recognized formats for works issued as physical copies. In addition to fulfilling the requirements of Article 8.1 while not being excluded by Article 9, works issued as physical copies are subject to the following criteria:

8.4.1. Works printed on paper. Before 1986 and after 2012, the only acceptable means of producing physical copies is by printing on paper using ink or toner.

8.4.2. Works on optical disc. To be considered published, a work on optical disc must be issued, in read-only memory form, after 1985 and before 2013, and

8.4.2.1. if issued before 2000, must contain a statement that any new name or nomenclatural act within it is intended for public and permanent scientific record and that the work is produced in an edition containing simultaneously obtainable copies, or

8.4.2.2. if issued after 1999, must contain a statement naming at least five major publicly accessible libraries in which copies of the optical disc were to have been deposited.

8.5. Works issued and distributed electronically. To be considered published, a work issued and distributed electronically must

8.5.1. have been issued after 2011,

8.5.2. state the date of publication in the work itself, and

8.5.3. be registered in the *Official Register of Zoological Nomenclature* (ZooBank) (see Article 78.2.4) and contain evidence in the work itself that such registration has occurred.

Examples. Evidence of registration is given by stating information that would be known only if the registration has occurred, such as the exact date of registration or the registration number assigned to the work or to a new name or nomenclatural act introduced in the work. A work issued as a PDF may contain the registration number as an embedded hyperlink. Even if the registration number is not visible in the normal viewing mode of the file or when the work is printed from the file, it is deemed to be cited in the work itself because the text of the hyperlink can easily be revealed using standard software for viewing PDFs.

8.5.3.1. The entry in the *Official Register of Zoological Nomenclature* must give the name and Internet address of an organization other than the publisher that

is intended to permanently archive the work in a manner that preserves the content and layout, and is capable of doing so. This information is not required to appear in the work itself.

8.5.3.2. The entry in the *Official Register of Zoological Nomenclature* must give an ISBN for the work or an ISSN for the journal containing the work. The number is not required to appear in the work itself.

8.5.3.3. An error in stating the evidence of registration does not make a work unavailable, provided that the work can be unambiguously associated with a record created in the *Official Register of Zoological Nomenclature* before the work was published.

Examples. The following are examples of admissible errors: In preparing a manuscript an author accidentally deletes the final digit of the registration number. An author states the wrong date of registration forgetting that ZooBank uses Coordinated Universal Time rather than local time. An author registers two works that are in review for publication and accidentally uses the same ZooBank number in both published versions.

The following are examples of inadmissible errors: An author, in preparing a manuscript for publication, states that day's date for the registration date, intending to register it later that day but forgetting to do so. The author discovers the omission after the work is published and immediately registers it; because registration occurred after publication, the work is not available. A publisher discovers errors in a work and reissues it to correct those errors, but instead of registering the new edition, uses the original ZooBank number; the revised edition is not available because it was not separately registered.

8.6. New methods of publication and archiving. The Commission may issue Declarations to clarify whether new or unconventional methods of production, distribution, formatting or archiving can produce works that are published in the meaning of the Code.

[Article 8.7 is unchanged. Recommendation 8A is modified, and new Recommendations 8B, 8C, 8D and 8H are added. The former 8B is deleted, the former 8C is modified and renumbered as 8E and the former 8D and 8E become the new 8F and 8G but are otherwise unchanged.]

Recommendation 8A. Wide dissemination. Authors have a responsibility to ensure that new scientific names, nomenclatural acts, and information likely to affect nomenclature are made widely known. Authors can accomplish this by publishing in appropriate scientific journals or well-known monographic series, by entering new names and nomenclatural acts into the *Official Register of Zoological Nomenclature* (ZooBank), and by sending copies of their works to the *Zoological Record*.

Recommendation 8B. Minimum edition of printed works. A work on paper should be issued in a minimum edition of 25 copies, printed before any is distributed.

Recommendation 8C. Electronic works. Electronic works should be structured to allow automated indexing and data extraction and should include actionable links to external resources (such as embedded hyperlinks to records in the *Official Register of Zoological Nomenclature*), where appropriate.

Recommendation 8D. Content immutable. The content of a work is immutable once it is published. Corrections should be made through notices of errata or other separate publications. Second or other additional printings of a work should be clearly labeled as such, with date of publication stated in the work, even if no changes have been introduced.

Recommendation 8E. Public accessibility of published works. Copies of published works that contain new scientific names or nomenclatural acts, or information likely to affect nomenclature, should be permanently conserved in or by libraries that make their holdings publicly accessible.

Recommendation 8H. Archiving encouraged. Authors are encouraged to ensure that their electronic works are archived with more than one archiving organization. Archiving organizations utilized for registered works should have permanent or irrevocable license to make a work accessible should the publisher no longer do so.

[Under Article 9, new Articles 9.2, 9.3 and 9.9 are added. Former Articles 9.2 through 9.6 are renumbered as 9.4 to 9.8. The former 9.7, 9.8 and 9.8 are reformulated as the new 9.12, 9.11 and 9.10, respectively. An example is added for 9.12 and Recommendation 9A is rephrased.]

Article 9. What does not constitute published work. Notwithstanding the provisions of Article 8, none of the following constitutes published work within the meaning of the Code:

- 9.1. after 1930, handwriting reproduced in facsimile by any process;
- 9.2. after 1985, works produced by hectographing or mimeographing;
- 9.3. before 1986 and after 2012, works issued on optical discs;
- 9.4. photographs as such;
- 9.5. proof sheets;
- 9.6. microfilms;
- 9.7. acoustic records made by any method;
- 9.8. labels of specimens;
- 9.9. preliminary versions of works accessible electronically in advance of publication (see Article 21.8.3);
- 9.10. materials issued primarily to participants at meetings (e.g. symposia, colloquia, congresses, or workshops), including abstracts and texts of presentations or posters;
- 9.11. text or illustrations distributed by means of electronic signals (e.g. via the Internet), except those fulfilling the requirements of Articles 8.1 and 8.5.
- 9.12. facsimiles or reproductions obtained on demand of an unpublished work [Art. 8], even if previously deposited in a library or other archive.

Example: A Ph.D. thesis that was distributed only to members of the student's thesis committee is listed for sale in the catalogue of a print-on-demand publisher. The print-on-demand work is a reproduction of the thesis. Because the thesis was an unpublished work in its original form, it remains unpublished. If an editorial process was evident in converting the work to print-on-demand form (e.g., change to single spacing, repagination, addition of running headers), it might be considered published.

Recommendation 9A. Avoidance of new names and acts in meeting abstracts. Authors should not include new names and nomenclatural acts in abstracts of papers or posters to be presented at meetings. This avoids the appearance that they are published and prevents inadvertent publication if the abstracts are widely distributed. (For disclaimer of abstracts volumes, see Recommendation 8G.)

[Changes to Article 10 (Criteria of Availability) proposed in the original draft of the Amendment have been removed, except that Recommendation 10B is modified and placed after Article 10.7.]

Recommendation 10B. Registration of names encouraged. Authors are encouraged to include registration numbers from the *Official Register of Zoological Nomenclature* for new names and nomenclatural acts introduced in their publications, and to register names and acts that have been previously published.

[Under Article 21 (determination of date), Articles 21.7 and 21.8 are modified and Article 21.9 is added.]

21.7. Date not specified. If the date of publication is not specified in a work the earliest day on which the work, or a part of it, is demonstrated to be in existence as a published work is to be adopted as the date of publication of the work or of that part.

21.7.1. In the absence of evidence as to day, the provisions of Article 21.3 apply.

21.7.2. Works issued as electronic copies are required to state a date of publication (Article 8.5.2), even if incompletely specified (Article 21.3).

21.8. Advance distribution of separates and preprints. Advance distribution of separates or preprints affects date of publication as specified by the following criteria:

21.8.1. Before 2000, an author who distributed separates in advance of the specified date of publication of the work in which the material was published thereby advanced the date of publication.

21.8.2. The advance issue of separates after 1999 does not advance the date of publication, whereas preprints on paper, unambiguously imprinted with their own date of publication, are published works from the date of their issue, if they fulfil the criteria for publication in Article 8 and are not excluded by Article 9 (see Glossary: ‘separate’, ‘preprint’).

21.8.3. Some works are accessible online in preliminary versions before the publication date of the final version. Such advance electronic access does not advance the date of publication of a work, as preliminary versions are not published (Article 9.9).

21.9. Works issued on paper and electronically. A name or nomenclatural act published in a work issued in both print and electronic editions takes its date of publication from the edition that first fulfilled the criteria of publication of Article 8 and is not excluded by Article 9.

[Under Article 78 (Powers and duties of the Commission), Article 78.2.4 is added to allow establishment of the *Official Register*.]

78.2.4. The Commission may establish and maintain an *Official Register of Zoological Nomenclature* (ZooBank), to record essential information about works, names and nomenclatural acts. The *Official Register of Zoological Nomenclature* may be maintained in electronic or paper form. The *Official Lists* and *Official Indexes* may be maintained in the *Official Register*.

[The following terms are added to the Glossary.]

archive, n. A depository for works (q.v.); v. to place a work in an archive with the intent that it be permanently preserved there.

Official Register, n. An abbreviated title for the *Official Register of Zoological Nomenclature* [Article 78.2.4], maintained by the Commission to record information about works, names and nomenclatural acts (see ZooBank).

optical disc, n. a laser-readable data storage medium. Compact disc read-only memory (CD-ROM) and digital video disc read-only memory (DVD-ROM) are optical disc formats that could be used to produce available works after 1985 and before 2013 (Article 8.4.2).

publication, electronic, n. A publication issued and distributed by means of electronic signals.

register, v. To enter into the *Official Register* information about a work, name, author, nomenclatural act, or other item tracked for purposes of zoological nomenclature.

registration number, n. A unique identifying number or alpha-numeric code assigned in the *Official Register* to a particular item.

ZooBank, n. The online version of the *Official Register of Zoological Nomenclature*.

Discussion

The reasoning behind the five main changes to the amendment summarized in the Introduction is detailed here. Further information about ZooBank in its role as the *Official Register of Zoological Nomenclature* will be published in subsequent issues of the *Bulletin of Zoological Nomenclature*.

Retroactivity. Although the Amendment is retroactive to 1 January 2012, there are no works that fulfilled the requirements of the amendment as of that date. The live version of ZooBank did not support the fields for statement of intended archive and ISSN or ISBN until later in the year (September 2012), because the requirements had not been established by vote of the Commission. Some Commissioners therefore felt that it was better to have a start date of 1 January 2013. That, however, raised a different problem, that ZooBank would have to support the required fields in advance of that date in order to allow pre-registration. Either way, electronic journal articles might appear that contained ZooBank registration numbers that were nonetheless not published under the Code. The majority of Commissioners deemed it better to allow electronic publication sooner than later.

Registration of works. The shift to registration of works instead of registration of names addressed a problem caused by requiring registration of names but not of acts

(as originally proposed): a work could have names that were not available because they were not registered, but nomenclatural acts in the same work would be available, which would be confusing. The alternative approach, to also require registration of acts in electronic works, was problematic, as it would be easy for authors to forget to register acts such as first reviser's choices in situations where the Code does not currently require a statement that an act has occurred. The shift to registering works lets registration of names and acts proceed on a voluntary basis, which gives more time to fully develop those functions in ZooBank, and allows more informed decision-making if such registrations are proposed to be mandatory in the future.

Intent to archive. The original proposal asked for archiving within one year, which created a 'limbo period' during which it would not be known if the archiving requirement had been fulfilled. The change to requiring 'intent to archive', analogous to intent to deposit a holotype (Article 16.4.2), eliminates this uncertainty. ZooBank provides a list of accepted archives and stores archive information for journals where such is known. If a user leaves the archive field blank, ZooBank warns that a statement of the intended archive is required for electronic publication. If an electronic journal is not known to have an affiliation with an archive that meets the requirements of the new Article 8.5.3.1, the author who is registering a work can designate PubMed as the archive. Users can also suggest archives to be added to the accepted list in ZooBank.

ISSN/ISBN. A majority of Commissioners thought it desirable to add a requirement that an electronic work have an ISSN or ISBN to be registered in ZooBank. Reasons in favour included consistency with the new botanical rule for electronic publications and likelihood that works with ISSN and ISBN would be deposited in national archives, as deposition is required in some countries. Reasons against included that ISSN and ISBN give no assurance of quality while increasing costs and that some outlets for taxonomic monographs have not traditionally used ISBN. The new Article 8.5.3.2 does not require that the ISSN or ISBN appear in the work.

Status of optical discs. The Commission changed the date ranges when optical discs could be used as a medium of publication under certain conditions to avoid retroactively disallowing works that formerly had published status. The discussion of the proposed amendment in BZN 65: 275 noted that the Commission was not aware of works on CD-ROM issued before 2000 in compliance with the requirements of the former Article 8.5. A few such works have now been brought to the Commission's attention, so the 'after 1985' time frame has been restored. Similarly, some works on optical disc have been produced during 2012 in compliance with the former Article 8.6. Rather than have all parts of the amendment come into effective on 1 January 2012, the Commission has allowed publication on CD-ROM to continue through 2012 under the conditions specified in Article 8.4.2.

THE VOTE:

The Commission was asked to vote on the following question on the Amendment on electronic publication:

‘The ICZN Code should be amended to allow electronic publication, subject to approval by the Commission of the readiness of ZooBank to accommodate the requirements of the Amendment’.

For: 23 – Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Lim, Ng, Pape, Patterson, Pyle, Rosenberg, van Tol, Winston, Yanega and Zhang.

Against: 3 – Minelli, Štys and Zhou.

Abstained: 1 – Kottelat.

Subsequently the Commission was asked to vote on the following question addressing the suitability of ZooBank to deal with the demands of the amendment:

‘ZooBank is fit for purpose and approved as the mechanism to register publications in support of the Amendment on e-publication. This vote refers to ZooBank as released on <http://test.zoobank.org/> from 1 August 2012 and Amendment (as previously voted on by the Commission)’.

With results:

For: 23 – Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Lim, Minelli, Pape, Patterson, Pyle, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Against: 4 – Fautin, Kottelat, Ng and Štys.

References

- ICZN. 1999. *International Code of Zoological Nomenclature*, 4th edition. xxix, 306 pp. The International Trust for Zoological Nomenclature, London.
- ICZN. 2008. Proposed Amendment of Articles 8, 9, 10, 21 and 78 of the *International Code of Zoological Nomenclature* to expand and refine methods of publication. *Bulletin of Zoological Nomenclature*, **65**: 265–275.
- ICZN. 2011. ICZN meeting on electronic publication. *Bulletin of Zoological Nomenclature*, **68**: 246–247.
- ICZN et al. 2009–2011. Contributions to the Discussion on Electronic Publication sections I–VI (March 2009, September 2009, December 2009, March 2010, September 2010, December 2010, published in *Bulletin of Zoological Nomenclature*, **66–68**, and available from <http://iczn.org/content/availability-electronic-publication>.

Case 3600

A proposal to reinstate as available the species-group names proposed for Devonian ammonoids (Mollusca, Cephalophoda) by Sobolew (1914a, 1914b)

R. Thomas Becker

*Westfälische Wilhelms-Universität, Institut für Geologie und Paläontologie,
Corrensstr. 24, D-48149 Münster, Germany
(e-mail: rbecker@uni-muenster.de)*

Svetlana V. Nikolaeva

*Paleontological Institute, Russian Academy of Sciences, Moscow, 117997
Russia & International Commission on Zoological Nomenclature Secretariat,
c/o Natural History Museum, London, U.K. (e-mail: s.nikolaeva@nhm.ac.uk)*

Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve current usage of ammonoid specific names that have been widely used by palaeontologists and stratigraphers for almost a century even though these names were established in a work placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Direction 32. This direction followed Opinion 132, in which the genus-group names (Gattungsbezeichnungen) established by Sobolew (1914a, 1914b) were considered to be formulae and not available generic names. However, Opinion 132 included no ruling on the specific names established in the same papers and some of these names have continued to be used in publications and databases. It is requested that the Commission reinstate the availability of Sobolew's species-group names published in the rejected work for the sake of nomenclatural stability. The spelling *umbilifer* Sobolew, 1914a is selected in this paper as the correct original spelling over *umbiliferum* under Article 24.2.3 of the Code.

Keywords. Nomenclature; taxonomy; Ammonoidea; Clymeniida; Goniatitida; Sobolew; Devonian; ammonoids.

1. In the early part of the 20th century D.N. Sobolew collected a large number of well-preserved goniatites and clymeniids (Cephalopoda, Ammonoidea) from the Upper Devonian of the Holy Cross (Świętokrzyskie) Mountains (Poland). In his initial studies (e.g. Sobolew, 1912) he published faunal lists and established in footnote descriptions a few new species using binominal nomenclature. The high degree of intergrading between long-known and new taxa prompted him to create a new, very formalistic approach to naming taxa, which was in conflict with then-existing rules of zoological nomenclature, reflected especially clearly in his formula-like generic terminology. His taxonomic and phylogenetic system was published in two scientific contributions, one in Warsaw (Sobolew, 1914a), and one, slightly later, in Germany (Sobolew, 1914b). Later, O.H. Schindewolf, the leading specialist for Devonian ammonoids at that time, presented a case to the Commission with the purpose of declaring Sobolew's 'generic' names (Gattungsbezeichnungen) formally

invalid; this was adopted in Opinion 132 (Smithsonian Miscellaneous Collections, 73(8): 39–40, 1936), which includes the statement ‘the Gattungsbezeichnungen published by Sobolew, 1914 are... formulae, not generic names, and have no status in Nomenclature’. This decision was briefly announced to ammonoid taxonomists (Schindewolf, 1949) and subsequently cited in other specialist publications (e.g. House, 1970, p. 669). In 1956, both of the works published by Sobolew in 1914 were placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Direction 32 (Opinions and Declarations: 1C: 313, 323–325, 427; May 1956). This action has remained unknown to the ammonoid taxonomic community at large.

2. Apart from the unavailable generic names, the two publications by Sobolew (1914a, 1914b) also included descriptions of 89 new species and subspecies, the latter often introduced as varieties (designated by ‘var.’). These names were initially little used (e.g. Schindewolf, 1923; Nalivkina, 1936a, 1936b, 1953), but from the beginning of the 1960s onwards, ca. 25 different authors, including the leading specialists on Devonian ammonoids, have referred to many of them. These authors include B.I. Bogoslovsky and V.E. Ruzhencev (Russia), M.R. House (U.K.), J. Czarnocki, H. Makowski and J. Dzik (Poland), J. Kullmann, O.H. Walliser, D. Korn and C. Klug (Germany), as well as the two applicants. Evidently the research community on Devonian ammonoids were quite unaware that both of Sobolew’s publications from 1914 had been placed on the Official Index (para. 1), and that not only the generic names, but also all of Sobolew’s new specific and subspecific names have no availability or validity in zoological nomenclature. Hence the researchers have continued using them and these names have been included in many taxonomic publications on Paleozoic ammonoids, fossil lists and databases (GONIAT database; GNI; ION).

3. In his original proposal to the Commission, O.H. Schindewolf was only concerned with the generic names. He never suggested that the specific names should be considered as unavailable and he himself continued using them (e.g. Schindewolf, 1923). The discussion between Schindewolf and the Commission recorded in Opinion 132 does not mention any specific or subspecific names.

4. Bogoslovsky (1957, p. 46) designated *Oma-dimeroceras* (*Praeglyphioceras*) *niwae* Sobolew, 1914 as the type species of his new genus *Lagowites* Bogoslovsky, 1957, while Czarnocki (1989, p. 61) designated *Gomi-protomeroclymenia Humboldti genulobata* Sobolew, 1914 as the type species of his new genus *Siekluckia*. *Lagowites* and *Siekluckia* are both widely accepted genera (Kullmann, 1960; Ruzhencev, 1962; Bogoslovsky, 1971; Yatskov, 1984, 1994; Becker et al., 2002; Bockwinkel et al., 2002; Dzik, 2002; Korn & Klug, 2002; Nikolaeva, 2011; GONIAT; Paleobiology Database, etc.).

5. Sobolew (1914a, 1914b) included his species/subspecies in his very formalistic taxonomic scheme but provided sufficient morphological distinctions and good enough illustrations to enable a clear understanding of his new taxa. His scheme incorporated not only these, but the majority of species that had been previously named in Lower/Middle Famennian ammonoid faunas. At least at the species level, he fully complied with all necessary principles of nomenclature. An exception was his reuse of identical subspecific names within different species of the same genera (five cases), creating primary homonyms.

6. More than half of Sobolew’s (1914a, 1914b) species/subspecies have been accepted as valid (marked in the list below) by subsequent workers. The specific names have been used by many authors for almost 100 years (e.g. Flügel, 1947; Ruzhencev,

1962; Walliser, 1966; Bogoslovsky, 1971; Becker, 1993, 2000; Bockwinkel et al., 2002; Dzik, 2002, 2006; Ebbighausen et al., 2002; Korn & Klug, 2002; Woroncowa-Marcinowska, 2006; Marynowski et al., 2007; Nikolaeva, 2010; Rakociński, 2012, etc.), and for 34 taxa there is currently a rather wide or complete consensus on their usefulness. If Sobolew's species/subspecies remain unavailable under Direction 32, all these taxa will have to be re-named, resulting in an unnecessary complication of the taxonomy of the Devonian ammonoids. The remaining specific names are considered by various authors as homonyms or junior subjective synonyms; however, because there is no universal agreement about their synonymy, it would make sense to make all the specific names proposed by Sobolew (1914a, 1914b) available under a new ruling.

7. The original generic assignments of Sobolew's (1914a, 1914b) species and subspecies poses no problem since he provided in his original publications a clear demarcation of the 'conventional' generic affinity, at least of all goniatites. He placed the 'conventional genera' at the rank of 'subgenera' immediately after his 'non-Linnean' generic terms. In addition he commented separately on the correlation of his generic formulae with the 'conventional genera'. This is also evident in the taxon list that Ozonkova (1977) provided in her summary/bibliography of Sobolew's scientific achievements. A similar list was published by Pajchlowa (1972). The new clymeniid species were mostly introduced as subspecies of established species (with the exception of *Gomi-monomeroclymenia subacuta* Sobolew, 1914a and *Goma-protomeroclymenia varicata* Sobolew, 1914b).

8. About two thirds of the 34 taxa in the list (given below) that have been regarded as valid by all recent workers lack any purported junior synonyms. These names can potentially be conserved by redescribing the taxon under the same name with new authorship. Article 13.1.2 allows for availability by reference to earlier descriptions in suppressed works, as long as an explicit fixation of a holotype or lectotype is included (Article 16.4.2 of the Code). *Gomi-monomeroclymenia humboldti genulobata* has already been reattributed to Czarnocki (1989) by Nikolaeva & Bogoslovsky (2005), which was partly because the type material of this taxon published by Czarnocki was wrongly claimed to be the holotype. The other nominal taxa in the list all have purported junior synonyms, which would prevent this course of action, and for many there is dispute about the precise synonymy. Even for the currently non-problematic species, specific names with reattributed authorship would have a non-negligible future risk of being recognized as invalid junior synonyms of taxa proposed since Sobolew's time, and meeting the conditions of Article 16.4.2 (concerning intended deposition of extant name-bearing types) would be difficult since the present whereabouts of Sobolew's type material are unknown (see para. 10 below). For all these reasons, we regard it as simplest to just re-establish the availability of all of Sobolew's (1914a, 1914b) species-group names.

9. No-one ever requested the Commission to suppress the specific names established by Sobolew (1914a, 1914b); it was his genera that were requested to be suppressed, but unfortunately the species were also suppressed when Sobolew's works were placed on the Index, along with other titles, following the Directive of the 14th International Congress of Zoology in Copenhagen which stated that the titles of books and papers dealt with by the Commission should be placed on the Official List and Official Index, respectively. The suppression of the specific names was therefore an inadvertent mistake, which has to be corrected.

10. The whereabouts of Sobolew's original collection are unknown. It is generally assumed that he took all the material with him to Kharkov after he left Poland. Subsequent Russian ammonoid specialists have never mentioned Sobolew's type material, but it is not certain that the collection has been lost. His nautiloid specimens re-emerged in the 1980s (allegedly brought from Kharkov) and are now housed in the Paleontological Institute in Moscow (Russia). Attempts were made by both applicants to find the ammonoid specimens, but those have not yet been recovered. Sobolew's species/subspecies documentation was sufficient to understand and recognize the great majority of them. In addition, there are subsequent collections from his type localities and from adjacent outcrops (e.g. House, 1970; Makowski, 1962, 1991; Czarnocki, 1989; Dzik, 2006; Woroncowa-Marcinowska, 2006; Niechwedowicz & Trammer, 2007; Marynowski et al., 2007). These include specimens that are suitable for neotype designations, if needed, for many but not all of the taxa under discussion. Sobolew's papers contain a comprehensive list of Devonian ammonoids from Poland, and these taxa have also been identified in many other regions of the world. All current Devonian ammonoid specialists have treated Sobolew's names as available, and thus it would be most practical to reinstate them for use in zoological nomenclature. It is requested that the specific names all be reinstated as available names, and the entries for Sobolew's works on the Official Index be amended to reflect that the species-group names proposed therein are available.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (a) to use its plenary power to rule that all 89 species-group names established by Sobolew (1914a, 1914b) are available from the original publications;
- (b) to emend the entries for Sobolew (1914a, 1914b) in the Official Index of Works in Zoology to record that the species-group names established in these works are available from the original publications, as ruled in (1) above.

A list of specific names established by Sobolew (1914a, 1914b), with reference to taxonomic treatments by subsequent authors

(The full list demonstrating the taxonomic treatment and usage is held by the Commission Secretariat)

The 34 taxa listed in bold have been regarded as valid by all/most subsequent authors and, therefore, would most likely have to be re-named if Sobolew's names continued to be considered unavailable. Those among them marked by † are based on juveniles and might eventually prove to have available synonyms. The unmarked non-bold names are generally considered as junior synonyms. The 14 additional names marked by * have been regarded as valid by some authors. Five junior homonyms and one nomen nudum that will remain invalid are marked by (-).

Genus *Oma-monomeroceras* (*Cheiloceras*)

1. ***acrilobum*** Sobolew, 1914a, p. 48;
2. ***acutilobum*** Sobolew, 1914a, p. 35;
3. ****subpartitum angustivaricatum*** Sobolew, 1914a, p. 37;
4. ****arcuatovaricatum*** Sobolew, 1914a, pp. 51–52;
5. ****avaricatum*** Sobolew, 1914a, p. 48;
6. ****contrcurvispina*** Sobolew, 1914a, p. 44;
7. ****contrverneuili*** Sobolew, 1914a, p. 44;

8. *depressum* Sobolew, 1914a, p. 49;
9. *discoideale* Sobolew, 1914a, p. 31;
10. **discotransversale* Sobolew, 1914a, pp. 46–47;
11. *glabrum* Sobolew, 1914a, p. 48;
12. *globosoides* Sobolew, 1914a, p. 42;
13. **globulare* Sobolew, 1914a, p. 49;
14. *subpartitum lativaricatum* Sobolew, 1914a, p. 36;
15. (-) *amblylobum lativaricatum* Sobolew, 1914a, p. 41;
16. **lenticulare* Sobolew, 1914a, pp. 49–50;
17. *longilobum* Sobolew, 1914a, p. 30;
18. (-) *sacculus longilobum* Sobolew, 1914a, p. 42;
19. **multivaricatum* Sobolew, 1914a, p. 31;
20. *discoideale* var. *parvum* Sobolew, 1914a, p. 31;
21. (-) *parvum* Sobolew, 1914a, p. 69;
22. *postinversum* Sobolew, 1914a, p. 43;
23. *Ch. praeglobosum* Sobolew, 1914a, p. 43
24. *praelagowiense* Sobolew, 1914a, p. 31;
25. *praelentiforme* Sobolew, 1914a, p. 34;
26. *praepolonicum* Sobolew, 1914a, p. 35;
27. *rotundum* Sobolew, 1914a, p. 44;
28. *semiinversum* Sobolew, 1914a, p. 46;
29. **simplicissimum* Sobolew, 1914a, p. 44;
30. **sinuvaricatum* Sobolew, 1914a, p. 51;
31. †*subcostatum* Sobolew, 1914a, p. 52;
32. *subinversum* Sobolew, 1914a, p. 43;
33. **sublagowiense* Sobolew, 1914a, p. 31;
34. **sublentiforme* Sobolew, 1914a, p. 30;
35. **sublentitransversale* Sobolew, 1914a, p. 47;
36. **subsинуvaricatum* Sobolew, 1914a, p. 51;
37. *tenuе* Sobolew, 1914a, p. 50;
38. **transversale* Sobolew, 1914a, p. 45–46;
39. *umbilifer* Sobolew, 1914a, p. 53. Hereby we select the spelling *umbilifer* as the correct original spelling over *umbiliferum* under Article 24.2.3 of the Code.

β-Oma-dimeroceras (*Sporadoceras*)

40. **curvispina* Sobolew, 1914a, p. 33;
41. *kielcense* Sobolew, 1914a, p. 32;
42. *lagowiense* Sobolew, 1914a, p. 32;
43. *nux* Sobolew, 1914a, p. 40;
44. **polonicum* Sobolew, 1914a, p. 39;
45. *praevaricatum* Sobolew, 1914a, p. 36;
46. **subvaricatum* Sobolew, 1914a, p. 35.

α-Oma-dimeroceras (*Dimeroceras*)

47. *globosum* Sobolew, 1914a, p. 42;
48. *lentiforme* Sobolew, 1914a, p. 34;
49. †*umbilicatum* Sobolew, 1914a, p. 54.

Oma-monomeroceras (*Aganides*)

50. **atavum* Sobolew, 1914a, p. 37;

51. (-) *discoideale* Sobolew, 1914a, p. 37;
52. *sulcatum* var. *globus* Sobolew, 1914a, p. 40.

α -Oma-dimeroceras (*Praeglyphioceras*)

53. *lagowiense* var. *globulare* Sobolew, 1914a, p. 40;
54. *kielcense* Sobolew, 1914a, p. 39;
55. **lagowiense* Sobolew, 1914a, p. 39;
56. †*niwae* Sobolew, 1914a, p. 48.

Oma-re-protomeroceras [assigned to *Prolobites* by Sobolew (1914a, p. 25)]

57. *umbilicatum* Sobolew, 1914a, p. 54.

Gomi-monomeroceras (*Tornoceras*)

58. *kielcense* Sobolew, 1914a, p. 57;
59. †*sublentiforme* Sobolew, 1914a, p. 56.

Gomi-re-monomeroceras (*Tornoceras*)

60. *planilobum angulatolobatum* Sobolew, 1914b, p. 355;
61. *planilobum arcuatolobatum* Sobolew, 1914b, p. 353;
62. *planilobum avaricatum* Sobolew, 1914a, p. 60;
63. (-) *dorsoplanum avaricatum* Sobolew, 1914a, p. 65;
64. †*curvidorsatum* Sobolew, 1914a, p. 59;
65. *evolutum* Sobolew, 1914a, p. 68;
66. **flexuosum* Sobolew, 1914a, p. 62;
67. *genulobatum* Sobolew, 1914b, p. 358;
68. (-) *planilobum ornatum* Sobolew, 1914b, p. 356;
69. †*planilobum* Sobolew, 1914a, p. 59;
70. *genulobatum planum* Sobolew, 1914b, p. 358;
71. *simplicius rotundatum* Sobolew, 1914b, p. 361;
72. *simplicius subacutum* Sobolew, 1914b, p. 360;
73. (-) *simplificatum rotundatum* Sobolew, 1914b, p. 361;
74. †*simplicius* Sobolew, 1914a, p. 63;
75. †*simplificatum* Sobolew, 1914a, p. 63;
76. †*sinuvaricatum* Sobolew, 1914a, p. 59;
77. (-) *simplificatum subacutum* Sobolew, 1914b, p. 360;
78. *umbilicatoides* Sobolew, 1914a, p. 64;
79. **umbilicatum* Sobolew, 1914a, p. 61.

Gomi-re-protomeroceras [assigned by Sobolew (1914a, p. 28) to *Mimoceras*]

80. *alobatum* Sobolew, 1914a, p. 61;
81. **simplicissimum* Sobolew, 1914a, p. 63.

Gomi-monomeroclymenia [assigned by Sobolew (1914a, p. 28) to *Oxyclymenia* or *Cyrtoclymenia*]

82. **Humboldti flexilobata* Sobolew, 1914a, p. 64;
83. *Humboldti genulobata* Sobolew, 1914a, p. 66;
84. *curvidorsata planiloba* Sobolew, 1914b, p. 354;
85. *Humboldti rotundata* Sobolew, 1914b, p. 361; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837);

86. **subacuta* Sobolew, 1914a, p. 64; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837); Dzik (2006) as a valid species of *Cyrtoclymenia*.
87. *Humboldti undosa* Sobolew, 1914b, p. 360; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837).

Gomi-protomeroclymenia (assigned by Sobolew (1914a, p. 28) to *Protactoclymenia*, *Genuclymenia* or *Varioclymenia*)

88. *angustiseptata (?) subcostata* Sobolew, 1914b, p. 362;
89. *varicata* Sobolew 1914b, p. 373.

References

- Becker, R.T. 1993. Stratigraphische Gliederung und Ammonoideen-Faunen im Nehdenium (Oberdevon II) von Europa und Nord-Afrika. *Courier Forschungsinstitut Senckenberg*, **155**: 1–405.
- Becker, R.T. 2000. Taxonomy, evolutionary history and distribution of the middle to late Famennian Wocklumeriina (Ammonoidea, Clymeniida). *Mitteilungen aus dem Museum für Naturkunde in Berlin, Geowissenschaftliche Reihe*, **3**: 27–75.
- Becker, R.T. & House, M.R. 2009. Devonian ammonoid biostratigraphy of the Canning Basin. *GSWA Bulletin*, **145**: 415–439.
- Becker, R.T., House, M.R., Bockwinkel, J., Ebbighausen, J. & Aboussalam, Z.S. 2002. Famennian ammonoid zones of the eastern Anti-Atlas (southern Morocco). *Münstersche Forschungen zur Geologie und Paläontologie*, **93**: 159–205.
- Bockwinkel, J., Becker, R.T. & Ebbighausen, V. 2002. Morphometry and taxonomy of Lower Famennian Sporadoceratidae (Goniaticidae) from Southern Morocco. *Abhandlungen der Geologischen Bundesanstalt*, **57**: 279–297.
- Bogoslovsky, B.I. 1957. O novykh vidakh devonskikh ammonoidei. *Materialy k Osnovam Paleontologii*, **1957**(1): 45–48.
- Bogoslovsky, B.I. 1971. Devonskie ammonoidei. II. Goniaticity. *Trudy Paleontologicheskogo Instituta*, **127**: 1–228.
- Czarnocki, J. 1989. Klimenie Gór Świętokrzyskich. *Prace Państwowego Instytutu Geologicznego*, **127**: 1–91.
- Dzik, J. 2002. Emergence and collapse of the Frasnian conodont and ammonoid communities in the Holy Cross Mountains, Poland. *Acta Palaeontologica Polonica*, **47**(4): 565–650.
- Dzik, J. 2006. The Famennian “Golden Age” of conodonts and ammonoids in the Polish part of the Variscan Sea. *Palaeontologia Polonica*, **63**: 1–359.
- Ebbighausen, V., Becker, R.T. & Bockwinkel, J. 2002. Morphometric Analyses and Taxonomy of Oxyconic Goniaticites (Paratrococeratidae n. subfam.) from the Early Famennian of the Tafelalt (Anti-Atlas, Morocco). *Abhandlungen Der Geologischen Bundesanstalt*, **57**: 167–180.
- Flügel, H. 1947. Nachweis der Oberdevonstufe II im Grazer Paläozoikum. *Verhandlungen der geologischen Bundesanstalt Wien*, **1947**(1–12): 190–195.
- House, M.R. 1970. On the origin of clymenid ammonoids. *Palaeontology*, **13**(4): 664–676.
- Korn, D. & Klug, C. 2002. Ammonoidea Devonicae. *Fossilium Catalogus Animalia*, **138**: 1–375.
- Korn, D. & Ziegler, W. 2002. The ammonoid and conodont zonation at Enkenberg (Famennian, Late Devonian; Rhenish Mountains). *Senckenbergiana Lethaea*, **82**(2): 453–462.
- Kullmann, J. 1960. Die Ammonoidea des Devon im Kantabrischen Gebirge (Nordspanien). *Abhandlungen der Akademie der Wissenschaften und Literatur, Mathematisch-naturwissenschaftliche Klasse*, **1960**(7): 1–105.
- Makowski, H. 1962. Problem of sexual dimorphism in ammonites. *Palaeontologia Polonica*, **12**: I–V, 1–92.
- Makowski, H. 1991. Dimorphism and evolution of the goniaticite *Trochoceras* in the Famennian of the Holy Cross Mountains. *Acta Palaeontologica Polonica*, **36**(3): 241–254.

- Marynowski, L., Rakocinski, M. & Zaton, M. 2007. Middle Famennian (Late Devonian) interval with pyritized fauna from the Holy Cross Mountains (Poland): Organic geochemistry and pyrite framboid diameter study. *Geochemical Journal*, **41**: 187–200.
- Nalivkina, A.K. 1936a. O verkhnedevonskikh goniatitakh Novoi Zemli. *Trudy Arkticheskogo Instituta*, **58**: 91–108.
- Nalivkina, A.K. 1936b. Verkhnedevonskie goniatitovye sloi r. Ai, Yuzhnyi Ural. *Trudy Tsentral'nogo Nauchno-Issledovatel'skogo Geologo-Razvedochnogo Instituta (VNIGRI)*, **79**: 1–21.
- Nalivkina, A.K. 1953. Verkhnedevonskie goniatity i klimenii Mugodzhar. *Trudy Vsesoyuznogo Neftyanogo Nauchno-Issledovatel'skogo Geologo-Razvedochnogo Instituta (VNIGRI)*, novaya seriya, **72**: 60–125.
- Niechwedowicz, M. & Trammer, J. 2007. Hydrodynamically controlled anagenetic evolution of Famennian goniatites from Poland. *Acta Palaeontologica Polonica*, **52**(1): 63–75.
- Nikolaeva, S.V. 2011. New data on the genus *Praeglyphioceras* (Praeglyphioceratidae, Ammonoidea). *Paleontologicheskii zhurnal*, **2011**(5): 28–36 (simultaneous translation in *Paleontological Journal*, **45**(5): 501–509).
- Nikolaeva, S.V. & Bogoslovsky, B.I. 2005. Devonskie ammonoidei. IV. Klimenii. *Trudy Paleontologicheskogo Instituta*, **287**: 1–220.
- Ozonkova, H. 1977. Problemy paleozoiku Gór Świętokrzyskich w pracach Dymitra Nikola-jewicza Sobolewa. *Geologia*, **2**: 139–227.
- Pajchlowa, M. 1972. Fauna of the Devonian. Pp. 71–126 in Czerminski, J. & Pajchlowa, M. (Eds.), *Geology of Poland*, vol. 2. Catalogue of fossils, Part 1, Palaeozoic. Instytut Geologiczny, Warsaw.
- Rakociński, M. 2012. The youngest Devonian record of “Housean pits” in ammonoids. *Geological Quarterly*, **56**(2): 387–390.
- Ruzhencev, V.E. 1960. Printsipy sistematiки, sistema I filogeniya paleozoyskikh ammonoidey. *Trudy Paleontologicheskogo Instituta*, **133**: 1–331.
- Ruzhencev, V.E. 1962. Nadotryad Ammonoidea. Ammonoidei. Obshchaya chast'. Pp. 243–334 in Orlov, Y.A. & Ruzhencev, V.E. (Eds.), *Osnovy Paleontologii*, 5, Mollyuski, Golovonogie, vol. 1. Akademiya Nauk, Moscow.
- Schindewolf, O.H. 1923. Beiträge zur Kenntnis des Paläozoikums in Oberfranken, Ostthüringen und dem Sächsischen Vogtlande. 1. Stratigraphie und Ammoneen Fauna des Oberdevons von Hof a. S. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Beilage-Band*, **49**: 250–357, 393–509.
- Schindewolf, O.H. 1949. Zur Nomenklatur der Clymenien (Cephalop., Ammon.). *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Monatshefte (B)*, **1949**: 64–76.
- Sobolew, D.N. 1912. O verkhnem neodevone Lagova. *Izvestiya Varshavskago Politekhnicheskago Instituta*, **3**: 1–20.
- Sobolew, D.N. 1914a. Nabroski po filogenii Goniatitov. *Izvestiya Varshavskago Politekhnicheskago Instituta*, **1914**(1): 1–193, 9 pls.
- Sobolew, D.N. 1914b. Über Clymenien und Goniatiten. *Paläontologische Zeitschrift*, **1**: 348–378.
- Walliser, O.H. 1966. Preliminary notes on Devonian, Lower and Upper Carboniferous goniatites in Iran. *Geological Survey of Iran, Report*, **6**: 7–24.
- Woroncowa-Marcinowska, T. 2006. Upper Devonian goniatites and co-occurring conodonts from the Holy Cross Mountains: Studies of the Polish Geological Institute collections. *Annales Societatis Geologorum Poloniae*, **76**: 113–160.
- Yatskov, S.V. 1984. Famennian ammonoids of Novaya Zemlya. *Byulleten Moskovskogo obschestva ispytatelei prirody, otdel geologicheskii*, **59**(3): 133.
- Yatskov, S.V. 1994. Devonian ammonoid zonation on Novaya Zemlya. *Newsletters on Stratigraphy*, **30**(3): 167–182.

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Case 3592***Dodecatoma* Westwood, 1849 (Insecta, Coleoptera): proposed conservation by suppression of *Dodecatoma* Dufour, 1841 (Insecta, Plecoptera)**

Paul J. Johnson

Insect Biodiversity Laboratory, South Dakota State University, Brookings, South Dakota, 57007, U.S.A (e-mail: paul_johnson@sdstate.edu)

R. Edward DeWalt

Illinois Natural History Survey, 1816 S. Oak Street, Champaign, Illinois 61820, U.S.A. (e-mail: dewalt@illinois.edu)

Neal L. Evenhuis

J. Linsley Gressitt Center for Research in Entomology, Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817-2704, U.S.A. (e-mail: NealE@bishopmuseum.org)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the usage of the genus-group name *Dodecatoma* Westwood, 1849 for a group of beetles (family PHENGODIDAE or RHAGOPHTHALMIDAE) by suppressing the unused senior homonym *Dodecatoma* Dufour, 1841, which was proposed for a group of stoneflies (family PERLIDAE).

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; DRILIDAE; PHENGODIDAE; RHAGOPHTHALMIDAE; *Dodecatoma*; *Dodecatoma bicolor*; beetles; stoneflies; Plecoptera; PERLIDAE; India; Nepal; Afghanistan; Pakistan; France.

1. Homonymy exists between the genus-group names *Dodecatoma* Dufour, 1841 (Insecta, Plecoptera) and *Dodecatoma* Westwood, 1849 (Insecta, Coleoptera). The senior name has generally been omitted from lists of generic names and has long been relegated to synonymy, whereas the junior name has been in use for over 150 years. In our opinion stability would best be served by suppressing the senior homonym.

2. In reviewing the plecopteran family PERLIDAE Stephens, 1836, as a part of his larger review of the anatomy and physiology of Orthoptera, Hymenoptera and Neuroptera, Dufour (1841, p. 610) proposed the genus-group name *Dodecatoma* Dufour, 1841 with one originally included species, *Perla flava* Geoffroy in Fourcroy, 1785 (p. 349) from France, which is the type species by monotypy.

3. Westwood (1849, Livraison 6, Number 16, unnumbered page), in Guérin-Méneville's *Species et iconographie générique des animaux articulés*, proposed *Dodecatoma* for the single Coleoptera species *Dodecatoma bicolor* Westwood, 1849 (Livraison 6, Number 16, unnumbered page) from 'India orientalis, Deccan' [India], which is the type species by monotypy. Dating of Westwood (1849) is from Chandler

(1999), who indicated that the 'revision' and plate of *Dodecatoma* [which was Number 16 of the full series with one unnumbered page] appeared in livraison 6 of Guérin-Méneville's *Species et iconographie générique des animaux articulés*, each livraison of which was sent to subscribers with all four 'revisions' [= treatments of genera, each with a separate plate and pages; single pages were unnumbered; multiple pages were separately numbered]. Thus, although the plate and 'revision' page of *Dodecatoma* are dated April 1843, they could not have been published before the date of the most recently dated 'revision' and associated plate of that livraison (Number 15, each of which have a printed date of January 1849).

4. After its proposal by Dufour (1841), *Dodecatoma* was considered a synonym of either *Perla* Geoffroy, 1762 (e.g. Walker, 1852), *Isopteryx* Pictet, 1841 (e.g. Albarda, 1889; Banks, 1906), or *Chloroperla* Newman, 1863 (e.g. Claassen, 1940) and dropped out of usage. No publication after 1899 could be found that treats *Dodecatoma* Dufour as a valid name, the last known one being Walker (1852).

5. Westwood's (1849) original description of *Dodecatoma* lacked a family-group attribution, but Schaum (1850) listed the genus in DRILIDES, now DRILIDAE. Both the genus and the family assignments were followed in use by Lacordaire (1857, p. 377). Subsequently, Olivier (1910), Wittmer (1944) and Bocák (2007) included *Dodecatoma* Westwood in their catalogues of RHAGOPHTHALMIDAE Olivier, 1907, DRILIDAE Blanchard, 1845, and PHENGODIDAE LeConte, 1861, respectively. Within the past 50 years, *Dodecatoma* Westwood received taxonomic attention from Wittmer (1944, 1979, 1995). Subsequent to its original description, four additional species have been assigned to this genus: *D. fuscicornis* Gorham, 1895 from India, *D. parvicornis* Wittmer, 1979 from Afghanistan and Pakistan, *D. gracilis* Wittmer, 1995 from Nepal and *D. riedeli* Wittmer, 1995 from India. No revisionary studies have been published and the name *Dodecatoma* has occurred in synopses of, or phylogenetic placements in, the families DRILIDAE (e.g. Crowson, 1955), PHENGODIDAE (e.g. Bocák, 2007), and RHAGOPHTHALMIDAE (e.g. Kawashima et al., 2010; Kundrata & Bocák, 2011). The geographic range of all described species presently includes India, Nepal, Pakistan and Afghanistan.

6. Although *Dodecatoma* Dufour, 1841 has not been used as a valid name after 1899, the criteria for Article 23.9.1 are not met as there are fewer than 25 publications in the last 50 years that mention the younger *Dodecatoma* Westwood, 1849 as a valid taxon.

7. Despite the fact that publications of *Dodecatoma* Westwood are scattered and not plentiful, *Dodecatoma* has no junior synonyms and has consistently been treated in the literature as a valid genus for over 150 years. Acceptance of priority of the senior but unused homonym *Dodecatoma* Dufour, 1841 would require a new replacement name for the junior homonym *Dodecatoma* Westwood, 1849 (there are no junior synonyms from which to choose), which we feel would threaten the nomenclatural and taxonomic stability of this name in the Coleoptera.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *Dodecatoma* Dufour, 1841 for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Dodecatoma* Westwood, 1849 (gender: feminine), type species by monotypy *Dodecatoma bicolor* Westwood, 1849 (Insecta, Coleoptera);

- (3) to place on the Official List of Specific Names in Zoology the name *bicolor* Westwood, 1849 as published in the binomen *Dodecatoma bicolor* (specific name of the type species of *Dodecatoma* Westwood, 1849) (Insecta Coleoptera);
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Dodecatoma* Dufour, 1841 (Insecta, Plecoptera), as suppressed in (1) above.

References

- Albarda, H. 1889. Catalogue raisonné et synonymique des névroptères dans les Pays-Bays et dans les Pays limitrophes. *Tijdschrift voor Entomologie*, **32**: 211–376.
- Banks, N. 1906. On the perlid genus *Chloroperla*. *Entomological News*, **17**: 174–175.
- Bocák, L. 2007. Family Phengodidae LeConte, 1861. Pp. 224–225 in Löbl, I. & Smetana, A. (Eds.), Catalogue of Palaearctic Coleoptera. Volume 4. Elateroidea – Derodontoidea – Bostrichoidea – Lymexyloidea – Cleroidea – Cucujoidea. Apollo Books, Stenstrup, Denmark.
- Chandler, D.S. 1999. Publication dates of papers on the Anthicidae (Coleoptera) by the Marquis F.T. de LaFerté-Sénéctère. *Transactions of the American Entomological Society*, **125**(4): 433–439.
- Claassen, P.W. 1940. A catalogue of the Plecoptera of the world. *Cornell University Agricultural Experiment Station, Memoir*, **232**: 1–235.
- Crowson, R.A. 1955. *The natural classification of the families of Coleoptera*. 187 pp. E.W. Classey, Ltd., Middlesex, UK.
- Dufour, F. 1841. Recherches anatomiques et physiologiques sur les orthoptères, les hyménoptères et les névroptères. *Mémoires Présentés par Divers Savants à l'Académie Royale des Sciences de l'Institut de France (Sciences Mathématiques et Physiques)*, (2)7: 265–647.
- Gorham, H.S. 1895. List of the Coleoptera in the collection of H. E. Andrewes Esq. from India and Burma, with descriptions of new species and notes. Families: Malacodermata - Erotylidae - Endomychidae. *Annales de la Société Entomologique de Belgique*, **39**: 293–330.
- Kawashima, I., Lawrence, J.F. & Branham, M.A. 2010. Rhagophthalmidae Olivier, 1907. Pp. 135–140 in Leschen, R.A.B., Beutel, R.G., Lawrence, J.F. (Volume Eds.), Coleoptera, beetles. Volume 2: Morphology and systematics (Elateroidea, Bostrichiformia, Cucujiformia partim) in Kristensen, N.P. & Beutel, R.G. (Eds.), *Handbook of zoology. A natural history of the phyla of the animal kingdom. Volume IV. Arthropoda: Insecta. Part 38*. Walter de Gruyter, Berlin & New York.
- Kundrata, R. & Bocák, L. 2011. Redescription and relationships of *Pseudothilmanus* Pic (Coleoptera: Rhagophthalmidae) a long-term neglected glow-worm beetle genus from the Himalayas. *Zootaxa*, **2794**: 57–62.
- Lacordaire, T. 1857. *Histoire naturelle des insectes. Genera des coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes*. Tome quatrième. 579 pp. Librairie Encyclopédique de Roret, Paris.
- Olivier, E. 1910. Rhagophthalmidae, Drilidae. In Schenkling, S. (Ed.), *Coleopterorum catalogus*. Pars 10. 10 pp. W. Junk, Berlin.
- Schaum, H. 1850. Bericht über die Leistungen in der Entomologie während des Jahren 1849. *Archiv für Naturgeschichte*, **1850**(2): 139–250.
- Walker, F. 1852. *Catalogue of the specimens of neuropterous insects in the collection of the British Museum*. Part I. (Phryngides—Perlides). 192 pp. British Museum, London.
- Westwood, J.O. 1849. *Dodecatoma*. [Number 16, 1 unnumbered page] in Guérin-Ménéville, F.E., *Species et iconographie générique des animaux articulés ou représentation des genres, avec leur description et celle de toutes les espèces de cette grande division du règne animal. Ouvrage formant une série de Monographies complètes*. Première partie: Insectes coléoptères. Livraison 6. Bureau de la Revue Zoologique et Magasin de Zoologie, Paris.

- Wittmer, W. 1944. Catalogue des Drilidae E. Oliv. (Coleoptera – Malacodermata). *Revista de la Sociedad Entomológica Argentina*, **12**(3): 203–221.
- Wittmer, W. 1979. Zur Kenntnis der Lampyridae der orientalischen Region (Coleoptera). *Entomologische Arbeiten aus dem Museum George Frey*, **28**: 83–92.
- Wittmer, W. 1995. Lampyridae und Omethidae aus dem indo-malaiischen Faunengebiet (Coleoptera). *Mitteilungen der Entomologischen Gesellschaft Basel*, **45**: 106–117.

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Case 3590

***Scarabaeus* Linnaeus, 1758, *Dynastes* MacLeay, 1819, SCARABAEINAE Latreille, 1802, and DYNASTINAE MacLeay, 1819 (Insecta, Coleoptera, SCARABAEOIDEA): proposed conservation of usage**

Frank-Thorsten Krell

Department of Zoology, Denver Museum of Nature & Science, 2001 Colorado Blvd, Denver, Colorado 80205–5798, U.S.A.
(e-mail: frank.krell@dmns.org)

Tristão Branco

Rua de Camões, 788, 2 Dto., P-4000–142 Porto, Portugal
(e-mail: tristao.branco@gmail.com)

Stefano Ziani

Via S. Giovanni, 41/a, I-47014 Meldola (FC), Italy
(e-mail: stefanoziani@alice.it)

Abstract. The purpose of this application, under Articles 65.2.2 and 70.2 of the Code, is to conserve the usage of the widely used names *Scarabaeus* Linnaeus, 1758 for a dung roller beetle, SCARABAEINAE Latreille, 1802 for the dung beetles subfamily, *Dynastes* MacLeay, 1819 for the hercules beetles genus, and DYNASTINAE MacLeay, 1819, for the rhinoceros beetles subfamily. The current usage of these names is threatened by the overlooked type species designation of *Scarabaeus hercules* Linnaeus, 1758 (currently *Dynastes hercules*) for *Scarabaeus* by Lamarck in Jolyclerc, 1807b. Lamarck's designation would transfer the name *Scarabaeus* from the widely known dung roller beetles to hercules beetles (currently *Dynastes*) and the family-group name SCARABAEINAE from the dung beetles to the rhinoceros beetles (currently DYNASTINAE). It is proposed to set aside all type species fixations for *Scarabaeus* before Hope's designation (1837) of *Scarabaeus sacer* Linnaeus, 1758, which would maintain the current usage of all names involved.

Keywords. Nomenclature; taxonomy; Coleoptera; SCARABAEIDAE; DYNASTINAE; *Scarabaeus*; *Dynastes*; *Dynastes hercules*; dung roller beetles; hercules beetles; rhinoceros beetles.

1. Linnaeus (1758, pp. 342, 345) described the genus *Scarabaeus* containing 63 nominal species and essentially covering what is now considered the superfamily SCARABAEOIDEA. Lamarck (in Jolyclerc, 1807b, p. 368) designated '*Scarabaeus hercules*, Linn.' as the type species of this genus (for Lamarck's responsibility, see Jolyclerc, 1807a, p. iii; for the authorship of the anonymously published work, see Barbier, 1809, p. 53, and Quérard, 1854, p. 197). This type species designation has been overlooked ever since. Latreille (1810, p. 428) designated '*Geotrupes Hercules*,

Fab.’ (= *Scarabaeus hercules* Linnaeus, 1758) as the type species for *Scarabaeus* (referred to as ‘Scarabée’). Direction 4 of the ICZN (1954, pp. 635 ff) declared the type species designations in Latreille’s (1810) ‘Table des genres avec l’indication de l’espèce qui leur sert de type’ as valid if only one species was selected and was included in the genus by its original author, and if no previous valid selection was made. Since all these conditions are met for *Scarabaeus*, Latreille’s type species designation occasionally has been considered valid. Nine years later, MacLeay (1819, p. 22) changed the concept of *Scarabaeus* to the concept that has been in use ever since: ‘the name *Scarabaeus* is here restored to the *Ateuchus sacer*, Fab.’ (= *Scarabaeus sacer* Linnaeus, 1758). This wording cannot be considered a type species designation according to Article 69.1.1 because neither the term ‘type’, nor ‘type species’, nor an equivalent term was used. Hope (1837, p. 22) designated *Scarabaeus sacer* Linnaeus, 1758 as the type species of *Scarabaeus* Linnaeus (‘*Sacer*. – Now the type of Mr. MacLeay’s genus *Scarabaeus*’). This type species designation has been accepted ever since (for rare exceptions see paras. 2 and 4).

2. Creutzer (1799, p. 79) described the genus *Actinophorus* for nine nominal species of roller dung beetles, nowadays in the tribes SCARABAEINI, GYMNOLEURINI, and SISYPHINI. *Actinophorus* was used in the few years following its introduction (Sturm, 1800; Duftschmid, 1805), but only sporadically later: Erichson (1848, p. 751) used it as a subgenus of *Ateuchus* Weber for some species currently in *Scarabaeus*, but excluding *S. sacer*. The usage as subgenus of *Ateuchus* was adopted by some authors, e.g. Boheman (1857), Gerstaecker (1871), Shipp (1895). Even fewer authors used *Actinophorus* as a valid generic name, namely Heyden (1886, 1887), Shipp (1896), and finally Lea (1922) in an uncommented list of previously recorded dung beetles from Australia. *Actinophorus* Creutzer was synonymized with *Scarabaeus* Linnaeus by Harold (1870, p. 104), followed by Bedel (1892). As the only authors in recent times, Ádám (1994, 1996), Ádám & Hegyessy (1998), and Enyedi & Varga (2006) used *Actinophorus* Creutzer, 1799 as a valid name. Enyedi and Ádám later returned to using *Scarabaeus* (Enyedi & Ádám, 2009; also Enyedi, 2006). Ádám (2003a) designated *Scarabaeus sacer* Linnaeus, 1758 as the type species of *Actinophorus* Creutzer.

3. For much of the nineteenth century, the current *Scarabaeus* species were often assigned to the genus *Ateuchus* Fabricius (1801, pp. XII, 54), which had been created for 58 nominal species including *Scarabaeus sacer* Linnaeus. Fabricius (1801) used *Scarabaeus* in the current sense of the scarabaeoid family GEOTRUPIDAE. However, Weber (1801, p. 10) had introduced the genus *Ateuchus* at least one and a half months earlier: Weber’s book was published before March 1801 (Evenhuis, 1997; see also BZN 62: 124) whereas the introductory chapter of Fabricius’s *Systema Eleutheratorum* is dated ‘10. April. 1801’. Fabricius (1801) did refer to Weber neither in his description of *Ateuchus* nor in the introduction of his book where authors are listed. *Ateuchus* likely was a widely used manuscript name that was incidentally published by two authors around the same time. *Ateuchus* Fabricius, 1801 is a junior homonym of *Ateuchus* Weber, 1801 and therefore permanently invalid. The type species of *Ateuchus* Weber is *Ateuchus histeroides* Weber, 1801 (p. 37) by monotypy, a North American species without close relationship to *Scarabaeus* in its current concept, hence the name *Ateuchus* is of no relevance to the present Case. Perty (1830, p. 38) introduced the family-group name ATEUCHITES, based on *Ateuchus* Weber, which has

rarely been used at the family rank in the sense of SCARABAEINAE (Shipp, 1894; Ádám, 1994, see para. 7) and is a junior subjective synonym of COPRIDES Leach, 1817 (see para. 9).

4. Though *Ateuchus* and *Actinophorus* have also been in use for *Scarabaeus sacer* and/or related species in the nineteenth century, the generic name *Scarabaeus* has been in continuous use as a valid name for this group of beetles since its introduction by Linnaeus (1758) (e.g. MacLeay, 1819; Heer, 1838; Hope, 1838; Mulsant, 1842; Gaubil, 1849; Harold 1870; Heyden et al., 1883, 1891; Bedel, 1892). Since 1900, *Scarabaeus* has been used exclusively for this taxon with the exception of the listing by Lea (1922; see para. 2) and the idiosyncratic, but Code-compliant, use of *Actinophorus* by Ádám (1994, 1996, 2003a). Later, Enyedi & Ádám (2009) returned to the established use of *Scarabaeus* as valid for dung rolling beetles. A list of 195 references from Zoological Record for the usage of *Scarabaeus* as a valid name since 1900 is held by the Commission Secretariat.

5. MacLeay (1819, p. 22) introduced the name *Dynastes* for ‘the genus *Scarabaeus* of Latreille’. Although not fulfilling modern standards of a bibliographic reference, the reference to *Scarabaeus* sensu Latreille is unequivocal: from 1802, Latreille (e.g. 1802, 1804, 1810, 1817) invariably used *Scarabaeus* in the sense of rhinoceros beetles, mostly with *Scarabaeus hercules* Linnaeus as an example or the type species (see para. 1). *Dynastes* MacLeay, 1819 is available by indication under Article 12.2.1. Kirby (1825, p. 567) designated *Scarabaeus hercules* Linnaeus as the type species of *Dynastes* MacLeay. *Dynastes* has been used in this sense ever since (Burmeister, 1847; Bates, 1888; Heyne & Taschenberg, 1908; Endrödi, 1947; Ritcher, 1966; Dechambre, 1980; Endrödi, 1985; Lachaume, 1985; Ratcliffe & Cave, 2006; Iannacone-Oliver & Soras-Vega, 2010). A list of 66 references from Zoological Record for the usage of *Dynastes* MacLeay in titles or abstracts as a valid name since 1900 is held by the Commission Secretariat.

6. The first higher-category name based on *Scarabaeus* was introduced by Laicharting (1781, unpaginated page opposite p. XII): Scaraboides, used instead of the then usual Eleutherata or Coleoptera for all beetles (‘Käferartige Insecten’). Since Laicharting introduced this name at order level (‘Ordnung’), it is not an available family-group name according to Article 35.1. Ádám’s (1994, 1996, 2003b) and Ádám & Hegyessy’s (1998) use of ‘SCARABAEIDAE (Laicharting, 1781)’ is erroneous. Latreille (1802, p. 144) was the first to introduce a family-group name based on *Scarabaeus*: SCARABAEIDES. The family included the nominal genus *Scarabaeus* Linnaeus. Latreille (1802) is the author of the nominal family SCARABAEIDAE, whose type genus is *Scarabaeus* Linnaeus, 1758. SCARABAEIDAE has been in ubiquitous use ever since, but its concept changed during the first 50 years of its existence along with the concept of its type genus (see para. 1). Zoological Record found 5916 unique references using SCARABAEIDAE in titles or abstracts after 1899. A list of the 1000 most recent records is held by the Commission Secretariat.

7. Without any explanation, Ádám (1994, 1996) and Ádám & Hegyessy’s (1998) used ‘SCARABAEIDAE (Laicharting, 1781)’ (= SCARABAEIDAE Latreille) in Latreille’s sense of DYNASTINAE or DYNASTIDAE (rhinoceros beetles) of modern authors whereas he calls SCARABAEINAE of modern authors ‘ATEUCHINAE (Castelnau, 1840)’ in 1994 and ‘COPRIDAE (Leach, 1815)’ in 1996 and 1998 (Ádám & Hegyessy, 1998). The latter nomenclature was followed by Enyedi & Varga (2006) only. In 2003a, Ádám created

the new family-group name ACTINOPHORINI for *Actinophorus* and *Ateuchetus* Bedel, 1892, i.e. what almost all other authors currently subsume under *Scarabaeus*. No other author has adopted ACTINOPHORINI.

8. The first family-group name based on *Dynastes* MacLeay, 1819 was DYNASTIDAE MacLeay, 1819 (p. 64) and has been used for the rhinoceros beetles (Bates, 1888; Dechambre, 1980; Endrödi, 1985; Lachaume, 1985; Ratcliffe & Cave, 2006) or a subgroup of these (Burmeister, 1847) ever since. The family-group name was even maintained by authors using the name *Scarabaeus* for *Dynastes* (Castelnau 1840, p. 110) or following Latreille's genus concepts otherwise (e.g. Lacordaire, 1856, p. 387; Jacquelin du Val & Fairmaire, 1859–63, p. 69). A list of 429 references from Zoological Record for the usage of DYNASTINAE in titles or abstracts since 1910 is held by the Commission Secretariat.

9. The second oldest family-group name based on a dung beetle genus after SCARABAEIDAE is COPRIDES Leach, 1817 (type genus *Copris* Geoffroy, 1762). COPRINAE (or COPRINI) has been used ever since, but rarely instead of SCARABAEINAE (Erichson, 1848; Lacordaire, 1856; and in some German-speaking literature where SCARABAEIDAE and *Scarabaeus* are used, but SCARABAEINAE is not: Reitter, 1892; Machatschke, 1969, Allenspach, 1970). In general, COPRINI is considered a subgroup (tribe) of SCARABAEINAE.

10. Despite being unaware of Lamarck's (in Jolyclerc, 1807b) type species designation, several authors have recognized the implications of Latreille's (1810) identical type species designation (Harold, 1870; Arrow, 1931) and subsequent Direction 4 (Ádám, 1994; Ziani, 2002; Ádám, 2003a; Zidek & Pokorný, 2005; Branco, 2007; Löbl & Smetana, 2007). Harold (1870) states that despite *Actinophorus* being the valid name for *Scarabaeus*, *Scarabaeus* undoubtedly is to be conserved ('Gattung *Scarabaeus*. Es scheint mir unzweifelhaft, dass fuer diese Gattung, welche sonst *Actinophorus* heissen müsste, der Linné'sche Name zu conserviren sei.' ['Genus *Scarabaeus*. It seems unquestionable to me that for this genus, that otherwise would have to be called *Actinophorus*, the Linnean name has to be conserved.']). He continues that *Scarabaeus hercules* was just the first species listed by Linnaeus, but by no means considered typical by the author, because Linnaeus did not create a new generic name but chose *Scarabaeus*, the traditional name for *S. sacer*. Likewise, Mulsant (1842, p. 44) stated: 'Avec M. Mac-Leay nous restituons aux insectes de ce genre le nom de *Scarabaeus*, sous lequel ils étaient connus des Romains' ['With Mr Mac-Leay we reinstate for the insects of this genus the name *Scarabaeus* under which it was known by the Romans']. Arrow (1931, p. 37) reviewed the nomenclatural history of SCARABAEINAE and proposed to treat *Scarabaeus* and *Dynastes* as nomina conservanda. Ádám (1994, 2002) was the only author content with following the Code with all consequences, using *Actinophorus* as valid and changing the concept of SCARABAEIDAE (for the latter see also Ádám, 2003b). This changed concept of SCARABAEIDAE for DYNASTIDAE was followed only by Ádám's compatriot Enyedi (2004, 2006), who did still use, however, the generic name *Scarabaeus* as valid, but outside the SCARABAEIDAE (Enyedi, 2006). A few years later, in a jointly authored paper, Enyedi & Ádám (2009) returned to the established use of SCARABAEIDAE. Ziani (2002) suggested referring to Article 70.2 to involve the Commission to invalidate Latreille's type species designation for *Scarabaeus*, but no further action was taken. Misinterpreting Recommendation 67B, Zidek & Pokorný (2005) erroneously

assumed that Latreille (1810) had designated *Scarabaeus sacer* as type species for both *Ateuchus* Fabricius and *Scarabaeus* Linnaeus, which is not the case. Branco (2007) presented the case comprehensively and suggested referring a case to the Commission under Article 65.2.2. Löbl & Smetana (2007, p. 25) recommended maintaining common usage of *Scarabaeus* with the type species *Scarabaeus sacer* Linnaeus until a case is made to the Commission and a ruling is published. Branco (2011) repeated his earlier suggestion, which we hereby put into effect.

11. Strictly following the Code would have the following consequences:

- (a) At the genus-group level: the established and undisputed generic name *Dynastes* for hercules beetles would be replaced by *Scarabaeus*, a widely used name for dung roller beetles. A genus of around 120 species of dung roller beetles, amongst them the sacred scarab of the Egyptians, would no longer be named *Scarabaeus*, but receive the almost forgotten name *Actinophorus*.
- (b) At the family-group level: the well known name DYNASTINAE for rhinoceros beetles would be replaced by SCARABAEINAE, which is currently in ubiquitous use for dung beetles. Dung beetles would be named COPRINAE Leach, 1817, the next oldest family-group name based on a dung beetle generic name. Old-world dung rollers, well-known as SCARABAEINI, would get the name ACTINOPHORINI. The superfamily SCARABAEOIDEA would remain unchanged, but in classifications placing dung and rhinoceros beetles in different families (e.g. Baraud, 1992; Carpaneto & Piattella, 1995; Kim, 2001; Morón, 2004; Lacroix, 2010), the scarab dung beetles would no longer belong to the SCARABAEIDAE.

It is unlikely that those drastic changes would be accepted in future as they have not been adopted in the past even though the nomenclatural facts have been published several times. Even a nomenclature strictly following the Code was proposed (Ádám, 1994, 2003a), but found only a single follower during the subsequent 18 years, and was later abandoned by its author himself (Enyedi & Ádám, 2009).

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Scarabaeus* Linnaeus, 1758 before that of *Scarabaeus sacer* Linnaeus, 1758 by Hope, 1837;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Scarabaeus* Linnaeus, 1758 (gender: masculine), type species *Scarabaeus sacer* Linnaeus, 1758, as ruled in (1) above;
 - (b) *Dynastes* MacLeay, 1819 (gender: masculine), type species *Scarabaeus hercules* Linnaeus, 1758 by subsequent designation by Kirby (1825);
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *sacer* Linnaeus, 1758, as published in the binomen *Scarabaeus sacer* (specific name of the type species of *Scarabaeus* Linnaeus, 1758);
 - (b) *hercules* Linnaeus, 1758, as published in the binomen *Scarabaeus hercules* (specific name of the type species of *Dynastes* MacLeay, 1819);
- (4) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) SCARABAEIDAE Latreille, 1802, type genus *Scarabaeus* Linnaeus, 1758 (Insecta, Coleoptera);

- (b) DYNASTINAE MacLeay, 1819, type genus *Dynastes* MacLeay, 1819 (Insecta, Coleoptera).

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References

- Ádám, L. 1994. A check-list of the Hungarian Scarabaeoidea with the description of ten new taxa (Coleoptera). *Folia Entomologica Hungarica*, **55**: 5–17.
- Ádám, L. 1996. Scarabaeoidea (Coleoptera) of the Bükk National Park. Pp. 299–308 in Mahunka, S., Zombori, L. & Ádám, L. (Eds.), *The Fauna of the Bükk National Park*. Hungarian Natural History Museum, Budapest.
- Ádám, L. 2003a. Faunistikai adatok a Kárpát-medencéből (Coleoptera: Scarabaeoidea). *Folia Historico Naturalia Musei Matraensis*, **27**: 101–136.
- Ádám, L. 2003b. Békés megye bogárfanuája, VII. Scarabaeoidea (Coleoptera). *Folia Historico Naturalia Musei Matraensis*, **27**: 137–144.
- Ádám, L. & Hegyessy, G. 1998. Adatok a Zempléni-hegység, a Hernád-völgy, a Bodroghöz, a Rétköz és a Taktaköz lemezescsapú bogárfaunájához (Coleoptera: Scarabaeoidea). *Zempléni Táj (különszám)*. *Információk Északkelet-Magyarország természeti értékeiről*, **2**: 1–80. Zempléni Környezetvédelmi Egyesület, Sátoraljaújhely.
- Allenspach, V. 1970. Coleoptera Scarabaeidae, Lucanidae. *Insecta Helvetica Catalogus*, **2**: 1–186.
- Arrow, G.J. 1931. *The Fauna of British India, Including Ceylon and Burma. Coleoptera Lamellicornia Part III. (Coprinae)*. xii, 428 pp., 13 pls., 1 map. Taylor & Francis, London.
- Baraud, J. 1992. Coléoptères Scarabaeoidea d'Europe. *Faune de France*, **78**: I–IX, 1–856, pls. I–XI.
- Barbier, A.-A. 1809. *Dictionnaire des ouvrages anonymes et pseudonymes Composés, traduits ou publiés en français et en latin, avec les noms des Auteurs, Traducteurs et Éditeurs*. Tome troisième. viii, 560 pp. Imprimerie Bibliographique, Paris.
- Bates, H.W. 1888. *Biologia Centrali-Americana. Insecta. Coleoptera. Vol. II. Part 2. Pectinicornia and Lamellicornia*. Taylor & Francis, London. [1888: pp. 161–336].
- Bedel, L. 1892. Révision des *Scarabaeus* paléarctiques. *L'Abeille*, **27**: 281–288.
- Boheman, C.H. 1857. *Insecta Caffrariae Annis 1838–1845 a J.A. Wahlberg Collecta. Pars II. Coleoptera. (Scarabaeides)*. 395 pp., 1 pl. Officina Nordstedtiana, Holmiae.
- Branco, T. 2007. Scarabaeoidea (Coleoptera) of Portugal: genus-group names and their type species. *Zootaxa*, **1453**: 1–31.
- Branco, T. 2011. Scarabaeidae de l'Afrique de l'Ouest: les noms du niveau genre et leurs espèces types (Coleoptera). *Catharsius La Revue*, **4**: 9–25.
- Burmeister, H. 1847. *Handbuch der Entomologie. Fünfter Band. Besondere Entomologie. Fortsetzung. Coleoptera Lamellicornia Xylophila et Pectinicornia*. VIII, 584 pp. Enslin, Berlin.
- Carpaneto, G.M. & Piattella, E. 1995. Coleoptera Polyphaga V (Lucanoidea, Scarabaeoidea). *Checklist delle Specie della Fauna Italiana*, **50**: 1–18.
- Castelnau, [F.L. Comte de]. 1840. *Histoire Naturelle des Insectes Coléoptères, Tome deuxième*. 563 pp. Duménil, Paris.
- Creutzer, C. 1799. *Entomologische Versuche*. 142 pp., 1 pl. Schaumburg, Wien.
- Dechambre, R.-P. 1980. Le genre *Dynastes* (Coleoptera Scarabaeoidea Dynastidae). *Bulletin de la Société Sciences Nat*, **27**: 5–10, 1 pl.
- Dufschmid, K. 1805. *Fauna Austriae, oder Beschreibung der Österreichischen Insecten für angehende Freunde der Entomologie*. Verlag der k. k. priv. akademischen Kunst- Musik- und Buchhandlung, Linz & Leipzig.

- Endrödi, S. 1947. Über die Gattung *Dynastes* Kirby. *Folia Entomologica Hungarica* (N.S.), **2**: 54–59.
- Endrödi, S. 1985. *The Dynastinae of the World*. 800 pp., 46 pls. Akadémiai Kiadó, Budapest.
- Enyedi, R. 2004. Szarvaskőlemezescsápú (Coleoptera: Scarabaeoidea) faunája. *Folia Historico Naturalia Musei Matraensis*, **28**: 135–140.
- Enyedi, R. 2006. Contributions to the Scarabaeoidea fauna of Hungary (Coleoptera: Scarabaeoidea). *Folia Historico Naturalia Musei Matraensis*, **30**: 215–225.
- Enyedi, R. & Ádám, L. 2009. A Mátra Múzeum bogárgyűjteménye, Scarabaeoidea (Coleoptera). *Folia Historico Naturalia Museum Matraensis*, **33**: 133–155.
- Enyedi, R. & Varga, K. 2006. A Déri Múzeum lemezescsápú bogárgyűjteménye (Coleoptera: Scarabaeoidea). *A Debreceni/Déri Múzeum Évkönyve*, **2005**: 123–134.
- Erichson, W.F. 1848. *Naturgeschichte der Insecten Deutschlands. Erste Abtheilung. Coleoptera. Dritter Band. VII*, 968 pp. Verlag der Nicolaischen Buchhandlung, Berlin.
- Evenhuis, N.L. 1997. *Litteratura Taxonomica Dipteriorum (1758–1930). Volume II. L–Z*. Pp. 427–871. Backhuys, Leiden.
- Fabricius, I.C. 1801. *Systema Eleutheratorum Secundum Ordines, Genera, Species Adiectis Synonymis, Locis, Observationibus, Descriptionibus. Tomus I*. Impensis Bibliopolii Academici Novi, Kiliae.
- Gaubil, J. 1849. *Catalogue synonymique des coléoptères d'Europe et d'Algérie*. 297 pp. Maisson, Paris.
- Geoffroy, E.-L. 1762. *Histoire abrégée des Insectes qui se trouvent aux environs de Paris; Dans laquelle ces Animaux sont rangés suivant un ordre méthodique. Tome Premier*. xxviii, 518 pp. Durand, Paris.
- Gerstaecker, A. 1871. Beitrag zur Insektenfauna von Zanzibar. III. Coleoptera. *Archiv für Naturgeschichte*, **37**(I): 42–43.
- Harold, E. von. 1870. Berichtigungen und Zusätze zum Catalogus Coleopterorum synonymicus et systematicus. *Coleopterologische Hefte*, **6**: 102–110.
- Heer, O. 1838. *Fauna Coleopterorum Helvetica*. XII, 652 pp. Impensis Orellii, Fusslini et Sociorum, Turici.
- Heyden, L. von. 1886. Zusammenstellung der von Herrn Dr. med. W. Kobelt von seiner Reise in den Provinzen Alger und Constantine, sowie von Tunis mitgebrachten Coleopteren. *Bericht über die Senckenbergische Naturforschende Gesellschaft in Frankfurt am Main, 1885–1886*, Vorträge und Abhandlungen: 35–57.
- Heyden, L. von. 1887. Bericht über die von den Herren Prof. Dr. Freiherrn von Fritsch und Prof. Dr. Rein in Marocco and dem Atlas-Gebirge gesammelten Käfer. *Deutsche Entomologische Zeitschrift*, **31**: 433–448.
- Heyden, L. von, Reitter, E. & Weise, J. 1883. *Catalogus Coleopterorum Europae et Caucasi. Editio Tertia*. Libreria Nicolai, Berolini.
- Heyden, L. von, Reitter, E. & Weise, J. 1891. *Catalogus Coleopterorum Europae, Caucasi et Armeniae Rossicae*. Reitter, Mödling.
- Heyne, A. & Taschenberg, O. 1908. *Die Exotischen Käfer in Wort und Bild*. (11), L, V–VII, 262 pp. Reusche, Leipzig.
- Hope, F.W. 1837. *The coleopterist's manual, containing the lamellicorn Insects of Linneus and Fabricius*. xiii, 121 pp., 3 pls. Henry G. Bohn, London.
- Hope, F.W. 1838. Observations on the Lamellicorns of Olivier. *Entomological Magazine*, **5**: 312–326.
- Iannacone-Oliver, J. & Soras-Vega, A. 2010. *Dynastes* (MacLeay, 1819) (Coleoptera: Scarabaeidae): distribución, lista de species para Sudamérica y crianza en caudiverio. *Scientia, Revista del Centro de Investigación de la Universidad Ricardo Palma*, **12**: 81–103.
- International Commission on Zoological Nomenclature. 1954. Direction 4. Addition to the Official Lists and Official Indexes of certain scientific names and of the titles of certain books dealt with in Opinions 134–160, exclusive of Opinion 149. *Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature*, **2**: 629–652.
- Jacquelin du Val, C. & Fairmaire, L. 1859–63. *Genera des Coléoptères d'Europe [...]*. Tome Troisième. 464 pp. Deyrolle, Paris.

- [Jolyclerc, N.] 1807a. *Dictionnaire raisonné et abrégé d'histoire naturelle, par d'anciens professeurs. Tome premier*. Fournier Frères, Paris. [Both Barbier (1809) and Quérard (1854) give 1806 as date of publication for both volumes of Jolyclerc's Dictionnaire. We could not verify this publication date from the copies available to us.]
- [Jolyclerc, N.] 1807b. *Dictionnaire raisonné et abrégé d'histoire naturelle, par d'anciens professeurs. Tome second*. Fournier Frères, Paris.
- Kim, J.I. 2001. Coleoptera (Scarabaeoidea II). *Economic Insects of Korea*, **10**: 1–197.
- Kirby, W. 1825. A description of such genera and species of insects, alluded to in the "Introduction to Entomology" of Messrs. Kirby and Spence, as appear not to have been before sufficiently noticed or described. *Transactions of the Linnean Society of London*, **14**: 563–572.
- Lachaume, G. 1985. *Dynastini 1: Dynastes – Megasoma – Golofa. Les coléoptères du monde 5*. 85 pp., 29 pls. Sciences Nat, Compiègne.
- Lacordaire, T. 1856. *Histoire naturelle des insectes. Genera des coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes*. 594 pp. Paris, Roret.
- Lacroix, M. 2010. *Melolonthinae afrotropicaux. Genera et catalogue (Coleoptera, Melolonthinae)*. 277 pp., 192 pls. Editions M. Lacroix, Paris.
- Laicharting, J.N. Edler von. 1781. *Verzeichniß und Beschreibung der Tyroler-Insecten. I. Theil Käferartige Insecten. I. Band*. xii, 248 pp. Johann Caspar Fűeßly, Zürich.
- Latreille, P.A. 1802. *Histoire naturelle, générale et particulière des crustacés et des insectes. Tome troisième*. 468 pp. F. Dufart, Paris.
- Latreille, P.A. 1804. Familien, Gattungen und Horden der Käfer, Coleoptera. *Magazin für Insektenkunde*, **3**: 1–138.
- Latreille, P.A. 1810. *Considérations générales sur l'ordre naturel des animaux composant les classes des crustacés, des arachnides, et des insectes; avec un tableau méthodique de leurs genres, disposés en familles*. 444 pp. F. Schoell, Paris.
- Latreille, P.A. 1817. Tome III, Contenant les crustacés, les arachnides et les insectes. In: Cuvier, [G.]: *Le Règne Animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée*. Deterville, Paris.
- Lea, A.M. 1922. Australian dung beetles of the sub-family Coprides. *Records of the South Australian Museum*, **2**: 353–396, pls. 6–9.
- Leach, W.E. 1817. Entomology. Pp. 57–172 in Brewster, D. (Ed.), *Edinburgh Encyclopaedia*. Edinburgh, Blackwood.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Löbl, I. & Smetana, A. 2007. *Catalogue of Palaearctic Coleoptera. Volume 4. Elateroidea – Derodontoidea – Bostrichoidea – Lymexyloidea – Cleroidea – Cucujoidea*. 935 pp. Apollo Books, Stenstrup.
- Machatschke, J.W. 1969. Familienreihe Lamellicornia. Pp. 265–371 in Freude, H., Harde, K.W. & Lohse, G.W., *Die Käfer Mitteleuropas Band 8. Terebrantia Heteromera Lamellicornia*. Goecke & Evers, Krefeld.
- MacLeay, W.S. 1819. *Horae Entomologicae: or essays on annulose animals*, vol. 1, part 1. xxx, 160 pp. S. Bagster, London.
- Morón, M.Á. 2004. *Escarabajos. 200 millones de años de evolución*. 204 pp. Instituto de Ecología, Xalapa.
- Mulsant, E. 1842. *Histoire naturelle des coléoptères de France. Lamellicornes*. viii, 623 pp., 3 pls. Maisson, Paris.
- Perty, M. 1830. Insecta Brasiliensia. Pp. 1–64 in Spix, J.B. de & Martius, C.F.P. (Eds.), *Delectus animalium articulorum, quae in itinere per Brasiliam annis MDCCCXVII–MDCCCXX jussu et auspiciis Maximiliani Josephi I. Bavariae Regis Augustissimi peracto*. Editori, Monachii.
- Quérard, J.-M. 1854. *Les écrivains pseudonyms et autres mystificateurs de la littérature française pendant les quatre derniers siècles, restitués à leurs véritable noms*. viii, 708 pp. L'Éditeur, Paris.

- Ratcliffe, B.C. & Cave, R.D.** 2006. The Dynastinae scarab beetles of Honduras, Nicaragua and El Salvador (Coleoptera: Scarabaeidae: Dynastinae). *Bulletin of the University of Nebraska State Museum*, **21**: i-vi, 1–424.
- Reitter, E.** 1892. Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen des palaearctischen Faunengebietes. *Verhandlungen des Naturforschenden Vereines in Brünn*, **30**: 141–262.
- Ritcher, P.O.** 1966. *White grubs and their allies. A study of North American scarabaeoid Larvae*. 219 pp. Oregon State University Press, Corvallis, Oregon.
- Shipp, J.W.** 1894. The coprophagous lamellicorns; a revised list of species belonging to the genera *Pachylomerus*, Kirby, and *Ateuchus*, Weber. *The Entomologist*, **27**: 258–314.
- Shipp, J.W.** 1895. A revised classification of the genus *Ateuchus*, Weber. *The Entomologist*, **28**: 218–221.
- Shipp, J.W.** 1896. On a new species of *Actinophorus* from Madagascar. *Novitates Zoologicae*, **3**: 420–421.
- Sturm, J.** 1800. *Verzeichnis meiner Insecten-Sammlung oder Entomologisches Handbuch für Liebhaber und Sammler*. XVI, 116 pp., 4 pls. Verfasser, Nürnberg.
- Weber, F.** 1801. *Observationes entomologicae, continentes novorum quae condidit generum characteres, et nuper detectarum specierum descriptiones*. Impensis Bibliopolii Academici Novi, Kiliae.
- Ziani, S.** 2002. Sulle specie appartenenti al genere *Scarabaeus* Linnaeus, 1758 (sensu lato) presenti in Romagna (Insecta Coleoptera Scarabaeidae). *Quaderno di Studi e Notizie di Storia Naturale della Romagna*, **16**: 27–35.
- Zídek, J. & Pokorný, S.** 2005. Supplemental comments on *Scarabaeus* Linné (Scarabaeinae: Scarabaeini). *Animma.X*, **9**: 1–12.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3589***Hemerodromia* Meigen, 1822 and HEMERODROMIINAE Schiner, 1862 (Insecta, Diptera, EMPIDIDAE): proposed conservation of usage of the genus-group and family-group names**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Entomological Research, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Adrian R. Plant

*Department of Biodiversity & Systematic Biology, National Museum of
Wales, Cathays Park, Cardiff CF10 3NP, U.K.
(e-mail: adrian.plant@museumwales.ac.uk)*

Abstract. The purpose of this application, under Article 70.2 of the Code, is to conserve the current usage of the generic name *Hemerodromia* Meigen, 1822, for a well-established genus of empidid flies. The type species of *Hemerodromia* has long been assumed to be *Tachydromia oratoria* Fallén, 1815, designated by Rondani in 1856. However, an earlier type-species designation of *Tachydromia mantispa* Meigen in Panzer, 1806, which is currently recognized as a valid species of *Phyllodromia* Zetterstedt, 1837, was made by Westwood in 1840. Additionally, one more type designation was found for *Hemerodromia* that is earlier than that of Rondani (1856): that by Blanchard in 1845 of *Hemerodromia monostigma* Meigen, 1822, which is currently recognized as a species of *Chelifera* Macquart, 1823. Acceptance of either of these earlier designations would threaten stability of nomenclature and taxonomy of the common and worldwide genus group taxon *Hemerodromia* Meigen, 1822. Acceptance of the Westwood designation would make *Hemerodromia* the senior synonym of *Phyllodromia* Zetterstedt, 1837. Acceptance of the Blanchard designation would make *Hemerodromia* a senior synonym of *Chelifera* Macquart, 1823. Either change would require species in *Hemerodromia* to be placed in the next available genus, *Microdromia* Bigot, 1857. To avoid the nomenclatural and taxonomic instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Hemerodromia* Meigen, 1822 prior to that of *Tachydromia oratoria* Fallén, 1815 by Rondani (1856) be set aside.

Keywords. Nomenclature; taxonomy; Diptera; EMPIDIDAE; HEMERODROMIINAE; *Hemerodromia*; *Tachydromia mantispa*; *Tachydromia oratoria*; *Hemerodromia monostigma*; *Phyllodromia*; *Chelifera*; empidid flies; worldwide.

1. Meigen (1822, p. 61) proposed the generic name *Hemerodromia* with nine originally included species: *Hemerodromia monostigma* Meigen, 1822; *Tachydromia precatoria* Fallén, 1815 (as '*Tachydromia praecatoria*'); *Tachydromia oratoria* Fallén, 1815; *Hemerodromia albicornis* Meigen, 1822; *Tachydromia mantispa* Meigen in

Panzer, 1806 (with *Empis melanocephala* Fabricius, 1794 and *Sicus raptor* Latreille, 1806 in synonymy); *Hemerodromia supplicatoria* Meigen, 1822; *Tachydromia vocatoria* Fallén, 1815; *Tachydromia ephippiata* Fallén, 1815; *Tachydromia irrorata* Fallén, 1815. A type species was not designated.

2. Westwood (1840, p. 132) designated *Tachydromia mantispa* Meigen in Panzer, 1806 (as '*Ta. mantispa*. Pz.') as the type species of *Hemerodromia*, and this is the earliest valid designation of an originally included species. *Tachydromia mantispa* is currently recognized as a valid species of *Phyllodromia* Zetterstedt, 1837 (e.g. Chvála & Wagner, 1989; Yang et al., 2007).

3. Blanchard in Audouin (1845, pl. 166) designated *Hemerodromia monostigma* Meigen, 1822 as the type species of *Hemerodromia*. *Hemerodromia monostigma* is currently recognized as the taxonomically valid species of *Chelifera* Macquart, 1823 (e.g. Chvála & Wagner, 1989; Yang et al., 2007).

4. Rondani (1856, p. 148) designated *Tachydromia oratoria* Fallén, 1815 (as 'TACHIDROMYA ORATORIA Fall.') as the type species of *Hemerodromia* (as '*Hemerodromia*'), and this is the universally recognized type species for this generic name.

5. *Hemerodromia* is a well-established and common generic name in EMPIDIDAE Latreille, 1804, contains more than some 140 species (e.g. Yang et al., 2007; Plant, 2011; Bisby et al., 2012) including one fossil species (Plant et al., 2012), is the type genus for the tribe HEMERODROMIINI Schiner, 1862 (which is within the subfamily HEMERODROMIINAE Schiner, 1862), and is recorded in the regional Diptera catalogues of all the zoogeographical realms: Nearctic (e.g. Melander, 1965; Poole, 1996), Palaearctic (e.g. Chvála & Wagner, 1989), Oriental (e.g. Smith, 1975), Neotropical (e.g. Smith, 1967), and Australasian/Oceanian (e.g. Smith, 1989). A list of 25 works in the last 50 years that uses *Hemerodromia* as a valid genus is kept with the Secretariat.

6. Acceptance of either of the two type species designations listed above that are earlier than that given in Rondani (1856) would threaten the stability of taxonomy and nomenclature of the well-established and common generic name *Hemerodromia*. Acceptance of the type species designation of *Tachydromia mantispa* Meigen in Panzer, 1806 by Westwood (1840, p. 132) would result in the synonymy of *Hemerodromia* (a member of the tribe HEMERODROMIINI) and *Phyllodromia* Zetterstedt, 1837 (a member of the tribe PHYLLODROMIINI Rondani, 1856) with *Hemerodromia* the senior synonym. The genus known as *Phyllodromia* would take on the name *Hemerodromia* (with *Phyllodromia* in subjective junior synonymy). The genus known as *Hemerodromia* would become *Microdromia* Bigot, 1857 (the next available name). Alternatively, acceptance of the type species designation of *Hemerodromia monostigma* Meigen, 1822 would result in the synonymy of *Hemerodromia* Meigen, 1822 and *Chelifera* Macquart, 1823 (both in the tribe HEMERODROMIINI) with *Hemerodromia* the senior synonym. The genus known as *Chelifera* would take on the name *Hemerodromia* (with *Chelifera* in subjective junior synonymy) and the genus known as *Hemerodromia* would become *Microdromia* Bigot, 1857 (the next available name).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Hemerodromia* Meigen, 1822 before that of *Tachydromia oratoria* Fallén, 1815 by Rondani (1856);

- (2) to place on the Official List of Generic Names in Zoology the name *Hemerodromia* Meigen, 1822 (gender: feminine), type species *Tachydromia oratoria* Fallén, 1815 by subsequent designation by Rondani (1856) as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *oratoria* Fallén, 1815, as published in the binomen *Tachydromia oratoria* (specific name of the type species of *Hemerodromia* Meigen, 1822).

References

- Audouin, J.V., Deshayes, G.P., d'Orbigny, A., Doyère, M.P.L.M., Dugès, A., Duvernoy, G.L., Laurillard, C.L., Milne Edwards, H., Roulin, F.D., & Valenciennes, A. 1845. *Le règne animal distribué d'après son organisation pour servir de base à l'histoire naturelle des animaux, et d'introduction à l'anatomie comparée, par Georges Cuvier. Edition accompagnée de planches gravées, représentant les types de tous les genres, les caractères distinctifs des divers groupes et les modifications de structure sur lesquelles repose cette classification; par un réunion de disciples de Cuvier.* Les insectes. Text 2. [Livraison 220], pp. 129–136; pls. 98, 166, 168, 174. Fortin, Masson & C^{ie}, Paris.
- Bisby, F.A., Roskov, Y.R., Orrell, T.M., Nicolson, D., Paglinawan, L.E., Bailly, N., Kirk, P.M., Bourgoin, T., Baillargeon, G. & Ouvrard, D. (Eds.), 2011. Species 2000 & ITIS Catalogue of Life: 2011 Annual Checklist. DVD; Species 2000: Reading, U.K.
- Chvála, M. & Wagner, R. 1989. Family Empididae Pp. 228–336 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 6. Therevidae—Empididae. 435 pp. Akadémiai Kiadó, Budapest.
- Meigen, J.W. 1822. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Dritter Theil.* x, 416 pp. Schultz-Wundermann, Hamm.
- Melander, A.L. 1965. Family Empididae Pp. 446–481 in Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. (Eds.), *A catalog of the Diptera of the Americas north of Mexico. United States Department of Agriculture, Agricultural Handbook*, 286: i–iv, 1–1696.
- Plant, A.R. 2011. Hemerodromiinae (Diptera: Empididae): a tentative phylogeny and biogeographical discussion. *Systematic Entomology*, **36**: 83–103.
- Plant, A.R., Shamshev, I. & Perkovsky, E. (2012) A late Eocene fossil *Hemerodromia* Meigen, 1822 (Diptera: Empididae: Hemerodromiinae) from Rovno amber. *Studia Dipterologica* (in press).
- Poole, R.W. 1996. Diptera. Pp. 15–604 in Poole, R.W. & Gentili, P. (Eds.), *Nomina Insecta Nearctica. A checklist of the insects of North America. Volume 3: Diptera, Lepidoptera, Siphonaptera*. 1143 pp. Entomological Information Services, Rockville, Maryland.
- Rondani, C. 1856. *Dipterologiae Italicae prodromus. Vol: I. Genera Italica ordinis dipterorum ordinatim disposita et distincta et in familias et stirpes aggregata*. 226, [2] pp. A. Stocchi, Parmae [= Parma].
- Sabrosky, C.W. 1999. Family group names in Diptera. An annotated catalog. *Myia*, **10**: 1–360.
- Smith, K.G.V. 1967. Family Empididae (Empidae, Hybotidae). *A catalog of the Diptera of the Americas south of the United States*, **39**: 1–67.
- Smith, K.G.V. 1975. Family Empididae (Empidae, Hybotidae). Pp. 185–211 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region*. Volume II. Suborder Brachycera through division Aschiza, suborder Cyclorrhapha. ix, 459 pp. University of Hawaii Press, Honolulu.
- Smith, K.G.V. 1980. Family Empididae. Pp. 655–669 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1420 pp. British Museum (Natural History), London.
- Smith, K.G.V. 1989. Family Empididae, pp. 382–392. In: Evenhuis, N.L. (Ed.), *Catalog of the Diptera of the Australasian and Oceanian Regions*. 1155 pp. Bishop Museum Press, Honolulu & E.J. Brill, Leiden.
- Westwood, J.O. 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.). Pp. 125–154 in: *An introduction to the modern classification of insects; founded on the*

natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects. 158 pp. Longman, Orme, Brown, Green & Longmans, London.
Yang D., Zhang K.-y., Yao G. & Zhang J.-h. 2007. *World catalog of Empididae (Insecta: Diptera)*. vi, 599 pp. China Agricultural University Press, Beijing.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3591

***Argyra* Macquart, 1834 (Insecta, Diptera, DOLICHOPODIDAE): proposed conservation of the name by suppression of *Porphyrops* Meigen, 1824**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Entomological Research, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Daniel J. Bickel

*The Australian Museum, 6–8 College Street, Sydney, NSW 2000, Australia
(e-mail: dan.bickel@austmus.gov.au)*

Harold Robinson

*Department of Botany, Smithsonian Institution, MRC-166, P.O. Box 37012,
Washington, DC 20013–7012, U.S.A. (e-mail: robinsoh@si.edu)*

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic name *Argyra* Macquart, 1834 (Diptera, DOLICHOPODIDAE), a widely distributed and well-established genus of dolichopodid flies. It is threatened by its infrequently used senior objective synonym, *Porphyrops* Meigen, 1824. It is proposed that *Argyra* Macquart, 1834 be conserved by suppressing *Porphyrops* Meigen, 1824 under the Commission plenary power, in the interest of nomenclatural stability.

Keywords. Nomenclature; taxonomy; Diptera; DOLICHOPODIDAE; *Argyra*; *Porphyrops*; *Rhaphium*; *Musca diaphana*; long-legged flies; cosmopolitan.

1. Meigen (1824, p. 45) proposed the genus *Porphyrops* with 29 originally included species: *Musca diaphana* Fabricius, 1781, *Porphyrops argyrius* Meigen, 1824, *P. argentinus* Meigen, 1824, *P. auricollis* Meigen, 1824, *Dolichopus vestitus* Wiedemann, 1817, *P. aulicus* Meigen, 1824, *Musca quadrifasciata* Fabricius, 1781, *P. leucocephalus* Meigen, 1824, *P. versicolor* Meigen, 1824, *P. crassipes* Meigen, 1824, *P. micans* Meigen, 1824, *P. elegantulus* Meigen, 1824, *P. communis* Meigen, 1824, *P. rufipes* Meigen, 1824, *P. nemoralis* Meigen, 1824, *P. thoracicus* Meigen, 1824, *P. pumilus* Meigen, 1824, *P. riparius* Meigen, 1824, *P. maculipes* Meigen, 1824, *P. fascipes* Meigen, 1824, *P. obscuratus* Meigen, 1824, *P. palmipes* Meigen, 1824, *Musca pallipes* Fabricius, 1794, *P. flavicollis* Meigen, 1824, *P. annulipes* Meigen, 1824, *P. aeneicoxa* Meigen, 1824, *P. flavicoxa* Meigen, 1824, *P. flaviventris* Meigen, 1824 and *P. ochraceus* Meigen, 1824. A type species was not designated.

2. Curtis (1835, pl. 541) designated *Musca diaphana* Fabricius, 1775 (as ‘*Dolichopus diaphanus* Fab.’), the first of the 29 originally included species, as the type species of *Porphyrops*; this is the earliest valid subsequent designation from originally included species.

3. Macquart (1834, p. 456) proposed the genus *Argyra* with seven originally included species: *Musca diaphana* Fabricius, 1775, *Argyra argentata* Macquart, 1834, *Dolichopus vestitus* Wiedemann, 1817, *M. quadrifasciata* Fabricius, 1781, *Porphyrops fulvipes* Macquart, 1827, *P. flaviventris* Macquart, 1827, and *P. annulatus* Macquart, 1827, a genus which he indicated as being equal to the first of three divisions of Meigen's *Porphyrops*. A type species was not designated.

4. Westwood (1840, p. 134) designated *Musca diaphana* Fabricius, 1775 (as '*D[olichopus]. diaphanus* Fab.'), the first of the first seven originally included species, as the type species of *Argyra*; this is the earliest valid subsequent designation of an originally included species. Sixteen years later, Rondani (1856, p. 141) designated the same type species for *Argyra*, which is the type designation most often cited in catalogues (e.g. Foote et al., 1965, p. 524; Robinson, 1970, p. 27; Dyte, 1975, p. 247; Dyte & Smith, 1980, p. 458; Negrobov, 1991, p. 64; Pollet et al., 2004, p. 18; Yang et al., 2006, p. 32).

5. Negrobov (1986, p. 184) proposed ARGYRINI as a tribe of the dolichopodid subfamily DIAPHORINAE Schiner, 1864 based on *Argyra* Macquart, 1834 as the type genus. There are no family-group names based on *Porphyrops*.

6. Meigen (1838) accepted Macquart's *Argyra* for his first division of *Porphyrops* species and he identified his third division of species with *Medeterus* Fischer, 1822, leaving the second division of species to be *Porphyrops* Meigen sensu stricto. Meigen's generic concepts of *Argyra* Macquart and *Porphyrops* Meigen being treated as separate were followed by others in the early literature (e.g. Rossi, 1848; Walker, 1851; Loew, 1861; Gerstaecker, 1864; Williston, 1888). Then, when some species of *Porphyrops* were found to belong to the older genus *Rhaphium* Meigen, 1803 in the RHAPHIINAE Bigot, 1852, subsequent papers treated *Porphyrops* as a junior subjective synonym of it (e.g. Johnson, 1925; Curran, 1930; Van Duzee, 1930). Coquillett (1910, pp. 509, 594) was the first to synonymize *Argyra* with *Porphyrops*, noting that the same type species had been designated for each. Soon after this, *Porphyrops* dropped out of usage as a valid genus (with the few exceptions noted below) and *Argyra* is the only one of the two names that has consistently appeared as a valid genus of the subfamily DIAPHORINAE in the literature.

7. With the generic concept as currently understood, *Argyra* Macquart, 1834 is a widespread genus of long-legged flies in the subfamily DIAPHORINAE in the family DOLICHOPODIDAE Latreille, 1809, is found in all the world's zoogeographical realms except the Australasian/Oceanian, and contains over 100 described species (Germann et al., 2011).

8. Unfortunately, *Argyra* cannot be given precedence over *Porphyrops* under Article 23.9.2 of the Code, as *Porphyrops* has been used as valid since 1899 (e.g. Smith, 1900; Kincaid, 1904; Meunier, 1907; Coquillett, 1910; Britton, 1920; Karl, 1935; Thomas, 1971).

9. *Argyra* has appeared as a taxonomically valid genus in no fewer than 35 papers by 31 authors in the last 50 years, including all the major regional Diptera catalogues (except the Australasian/Oceanian where the genus does not occur) and world catalogue of DOLICHOPODIDAE (Dyte & Smith, 1980; Negrobov, 1986; Pollet et al., 2004; Robinson, 1970; Yang et al., 2006) (a full list of these papers is kept with the Commission Secretariat). In contrast, *Porphyrops* has appeared as a taxonomically

valid genus in only one publication in the last 50 years (Thomas, 1971; the single new species described in it having since been transferred to the genus *Rhaphium*), and entries for *Porphyrops* in recent regional and world catalogues were as a synonym of *Agyra*, with the recommendation that an application should be submitted to the Commission to request conservation of *Argyra* Macquart, 1834 over the older *Porphyrops* Meigen, 1824 to ensure stability of nomenclature and taxonomy for the generic name *Argyra*.

10. Foote et al. (1965, p. 524) indicated that an application to conserve *Argyra* Macquart, 1834 had been made, but the Commission Secretariat, when asked about it when the current paper was being written, could find no record of such an application.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to conserve the name *Argyra* Macquart, 1834 by suppressing its objective senior synonym *Porphyrops* Meigen, 1824 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Argyra* Macquart, 1834 (gender: feminine), type species *Musca diaphana* Fabricius, 1775 by subsequent designation by Westwood (1840);
- (3) to place on the Official List of Specific Names in Zoology the name *diaphana* Fabricius, 1775 as published in the binomen *Musca diaphana* (specific name of the type species of *Argyra* Macquart, 1834);
- (4) to place on the Official List of Family-Group Names in Zoology the name ARGYRINI Negrobov, 1986, type genus *Argyra* Macquart, 1834;
- (5) to place on the Official Index of Rejected and Invalid Generic Names in Zoology, the name *Porphyrops* Meigen, 1824 (gender: feminine), type species *Musca diaphana* Fabricius, 1775 by subsequent designation by Curtis (1835).

References

- Britton, W.E. 1920. Check-list of the insects of Connecticut. *State of Connecticut, State Geological and Natural History Survey, Bulletin*, **31**: 1–397.
- Coquillett, D.W. 1910. The type-species of the North American genera of Diptera. *Proceedings of the United States National Museum*, **37**: 499–647.
- Curran, C.H. 1930. Report on the Diptera collected at the station for the study of insects, Harriman Interstate Park, N.Y. *Bulletin of the American Museum of Natural History*, **61**: 21–112.
- Curtis, J. 1835. *British entomology; being illustrations and descriptions of the genera of the insects found in Great Britain and Ireland: containing coloured figures from nature of the most rare and beautiful species, and in many instances of the plants upon which they are found*. [Part 135. Pls. 538–541.] Published by the author, London.
- Dyte, C.E. 1975. Family Dolichopodidae. Pp. 212–258 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region. Volume II. Suborder Brachycera through division Aschiza, suborder Cyclorrhapha*. ix, 459 pp. University of Hawaii Press, Honolulu.
- Dyte, C.E. & Smith, K.G.V. 1980. Family Dolichopodidae. Pp. 443–463 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1420 pp. British Museum (Natural History), London.
- Foote, R.H., Coulson, J.R. & Robinson, H. 1965. Family Dolichopodidae. Pp. 482–530 in Stone, A., Sabrosky, C.W., Foote, F.H. & Coulson, J.R., *Catalog of the Diptera of the*

- Americans north of Mexico. *United States Department of Agriculture, Agriculture Handbook*, **286**: 1–1696.
- Germann, C., Pollett, M. & Bernasconi, M.V.** 2011. Aspects of European *Argyra* systematics: molecular insights and morphology (Diptera: Dolichopodidae). *Entomologica Fennica*, **22**: 5–14.
- Gerstaecker, A.** 1864. Uebersicht der in der Umgegend Berlins bis jetzt beobachteten Dolichopoden. *Stettiner Entomologische Zeitung*, **25**: 20–48.
- Johnson, C.W.** 1925. Fauna of New England. 15. List of the Diptera or two-winged flies. *Occasional Papers of the Boston Society of Natural History*, **7**: 1–326.
- Karl, O.** 1935. Die Fliegenfauna Pommerns. Diptera Brachycera. *Stettiner Entomologische Zeitung*, **96**: 106–130.
- Kincaid, T.** 1904. The insects of Alaska. Introduction, pp. 1–34. In: Ashmead, W.H., Banks, N., Caudell, A.N., Cook, O.F., Currie, R.P., Dyar, H.G., Folsom, J.W., Heidemann, O., Kincaid, T., Pergande, T & Schwarz, E.A., *Harriman Alaska Series. Volume VIII. Insects. Part I.* 238 pp. Smithsonian Institution, Washington, D.C.
- Loew, H.** 1861. Neue Beiträge zur Kenntniss der Dipteren. Achter Beitrag. Die nordamerikanischen Dolichopodiden. Pp. 1–60 in Loew, H., *Programm der Königlichen Realschule zu Meseritz zu der am 25. März 1861 stattfindenden öffentlichen Prüfung alle Gönner und Freunde der Anstalt, insbesondere die Eltern und Angehörigen sämtlicher Schüler.* 60, viii pp. F.W. Lorenz, Meseritz [= Międzyrzecz].
- Loew, H.** 1864. *Monographs of the Diptera of North America.* Prepared for the Smithsonian Institution. Part II. xi, 360 pp. Smithsonian Institution, Washington, D.C.
- Macquart, P.-J.-M.** 1834. *Histoire naturelle des insectes. Diptères. Ouvrage accompagné de planches.* Tome première. 578 p. N.E. Roret, Paris.
- Meigen, J.W.** 1824. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Vierter Theil.* xii, 428 pp. Schultz-Wundermann, Hamm.
- Meigen, J.W.** 1838. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Siebenter Theil oder Supplementband.* xii, 434, [1] pp. Schulz, Hamm.
- Meunier, F.A.** 1907. Monographie des Dolichopodidae de l'ambre de la Baltique. *Le Naturaliste*, (2)**29**: 197–199.
- Negrobov, O.P.** 1986. On the system and phylogeny of flies of the family Dolichopodidae (Diptera). *Entomologicheskoe Obozrenie*, **65**: 182–185.
- Negrobov, O.P.** 1991. Family Dolichopodidae. Pp. 11–139 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera. Volume 7. Dolichopodidae—Platypezidae.* 291 pp. Akadémiai Kiadó, Budapest & Elsevier, Amsterdam.
- Pollet, M.A.A., Brooks, S.E. & Cumming, J.M.** 2004. Catalog of the Dolichopodidae (Diptera) of America north of Mexico. *Bulletin of the American Museum of Natural History*, **283**: 1–114 pp.
- Robinson, H.** 1970. Family Dolichopodidae (Dolichopidae). *Catalog of the Diptera of the Americas South of the United States*, **40**: 1–92.
- Rondani, C.** 1856. *Dipterologiae Italicae prodromus.* Vol: I. Genera Italica ordinis dipterorum ordinatim disposita et distincta et in familias et stirpes aggregata. 226 , [2] p. A. Stocchi, Parmae [= Parma].
- Rossi, F.W.** 1848. *Systematisches Verzeichniss der zweiflügelichten Insekten (Diptera) des Erzherzogthumes Österreich mit Angabe des Standortes, der Flugzeit und einigen andern physiologischen Bemerkungen.* x , 86 pp. W. Braumüller, Wien [= Vienna].
- Smith, J.B.** 1900. The insects of New Jersey. A list of the species occurring in New Jersey, with notes on those of economic importance. *State of New Jersey. Annual Report of the State Board of Agriculture*, **27**[1899]: 1–731.
- Thomas, A.G.B.** 1971. *Porphyrops vandeli*, n. sp., Rhaphiinae nouveau des Pyrénées (Diptera, Dolichopodidae). *Annales de Limnologie*, **7**(3): 415–419.
- Van Duzee, M.C.** 1930. Dolichopodidae, vol.V(1). In: *Diptera of Patagonia and south Chile based mainly on material in the British Museum (Natural History).* 92 pp. British Museum (Natural History), London.
- Walker, F.** 1851. *Insecta Britannica. Diptera*, vol. 1. vi, 313 , [1] pp. Reeve & Benham, London.

- Westwood, J.O.** 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.), pp. 125–154 in: *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects*. 158 pp. Longman, Orme, Brown, Green & Longmans, London.
- Williston, S.W.** 1888. *Synopsis of the families and genera of North American Diptera with bibliography and new species, 1878–88*. 84 pp. J.T. Hathaway, New Haven, Connecticut.
- Yang D., Zhu, Y.-j., Wang M.-q. & Zhang, L.-l.** 2006. *World catalog of Dolichopodidae (Insecta: Diptera)*. vii, 704 pp. China Agricultural University Press, Beijing.

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Case 3595***Ocydromia* Meigen, 1820 (Insecta, Diptera, HYBOTIDAE): proposed conservation of usage**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Research in Entomology, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Bradley J. Sinclair

*Canadian National Collection of Insects & Canadian Food Inspection
Agency, Ottawa Plant Laboratory - Entomology, K.W. Neatby Bldg.,
C.E.F., 960 Carling Ave., Ottawa, ON, Canada K1A 0C6
(e-mail: bradley.sinclair@inspection.gc.ca)*

Abstract. The purpose of this application, under article 70.2 of the Code, is to conserve the current usage of the generic name *Ocydromia* Meigen, 1820 for a well-established genus of hybotid flies. The type species of *Ocydromia* has long been assumed to be *Empis glabricula* Fallén, 1816. However, the correct type species is *Ocydromia ruficollis* Meigen, 1820, which is currently treated in the genus *Leptopeza* Macquart, 1834. Acceptance of *Ocydromia ruficollis* Meigen, 1820 as the type species of *Ocydromia* would change the current concept of that genus to that of *Leptopeza*, and a new generic name would be required for the taxon currently called *Ocydromia*. To avoid the nomenclatural instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Ocydromia* Meigen, 1820 prior to that of *Empis glabricula* Fallén, 1816 by Westwood (1840) be set aside.

Keywords. Nomenclature; taxonomy; Diptera; HYBOTIDAE; OCYDROMIINAE; *Ocydromia*; *Empis glabricula*; *Ocydromia ruficollis*; *Leptopeza*; hybotid flies; cosmopolitan.

1. Meigen (1820, p. 351) proposed the generic name *Ocydromia* for five new species: *Empis glabricula* Fallén, 1816, *Ocydromia rufipes* Meigen, 1820, *Ocydromia ruficollis* Meigen, 1820, *Ocydromia flavipes* Meigen, 1820 (as ‘Oc. flavipes. Meg.’), and *Ocydromia scutellata* Meigen, 1820. A type species was not designated.

2. Stephens in Richardson (1836, p. 609) designated *Ocydromia ruficollis* Meigen, 1820 as the type species of *Ocydromia*. This designation was overlooked by subsequent authors until recently and is the earliest subsequent designation of an originally included species.

3. Westwood (1840, p. 133) designated *Empis glabricula* Fallén, 1816 (p. 33) (as ‘Oc. glabricula Fall.’) as the type species of *Ocydromia*. The universally accepted concept of *Ocydromia* is based on this type species designation.

4. Evenhuis (2010, p. 43) discovered the overlooked type species designation for *Ocydromia* by Stephens in Richardson (1836). Noting the potential instability that

would result from acceptance of this earlier designation, he suggested that ‘Application to the ICZN to suppress the designation of *Ocydromia ruficollis* Meigen, 1820 by Stephens in Richardson (1836) to conserve the current generic concept of *Ocydromia* Meigen, 1820 is warranted’.

5. *Ocydromia* Meigen, 1820 is a widespread genus of HYBOTIDAE Meigen, 1820 occurring in all zoogeographical realms except the Australasian/Oceanian, that contains eight species (Yang et al., 2007) and is the type genus of the subfamily OCYDROMIINAE Schiner, 1862 (p. lii) (Sabrosky, 1999), which comprises 15 genera (Sinclair & Cumming, 2006). Recent catalogues of Diptera record *Ocydromia* as a taxonomically valid genus occurring in the Nearctic (e.g. Melander, 1965; Poole, 1996), Oriental (e.g. Smith, 1975), Afrotropical (e.g. Smith, 1980) and Palaearctic (e.g. Chvála & Kovalev, 1989) regions.

6. Nomenclatural instability would result from the adoption of *Ocydromia ruficollis* as the type species of *Ocydromia* as designated by Stephens in Richardson (1836). *Ocydromia ruficollis* is currently treated as a junior synonym of *Ocydromia flavipes* Meigen, 1820 in the genus *Leptopeza* Macquart, 1834 (e.g. Chvála & Kovalev, 1989; Yang et al., 2007). Acceptance of *O. ruficollis* as the type species of *Ocydromia* would result in the subjective synonymy of *Ocydromia* and *Leptopeza*, with *Ocydromia* having priority. The genus currently known as *Leptopeza* would take the name *Ocydromia* (with *Leptopeza* in subjective synonymy). The genus currently known as *Ocydromia* would require a new genus be described for its species (the only name currently in synonymy with it is *Eucinesia* Gistel, 1848, which cannot be used since it is an unjustified replacement name for *Ocydromia* Meigen, 1820 and has the same type species).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all type species fixations for the nominal genus *Ocydromia* Meigen, 1820 before that of *Empis glabricula* Fallén, 1816 by Westwood (1840);
- (2) to place on the Official List of Generic Names in Zoology the name *Ocydromia* Meigen, 1820 (gender: feminine), type species *Empis glabricula* Fallén, 1816 by subsequent designation by Westwood (1840) as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *glabricula* Fallén, 1816 as published in the binomen *Empis glabricula* (specific name of the type species of *Ocydromia* Meigen, 1820);
- (4) to place on the Official List of Family-Group Names in Zoology the name OCYDROMIINAE Schiner, 1862 (type genus: *Ocydromia* Meigen, 1820);

References

- Chvála, M. & Kovalev, V.G. 1989. Family Hybotidae. Pp. 174–227 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 6. Therevidae—Empididae. 435 pp. Elsevier Science Publishers, Amsterdam & Akadémiai Kiadó, Budapest.
- Evenhuis, N.L. 2010. Type designations of Diptera (Insecta) in the *Encyclopaedia Metropolitana*. *Zootaxa*, **2653**: 37–50.
- Fallén, C.F. 1816. *Empidiae Sveciae. Quarum descriptionem continuatam Venia Ampl. Facult. Philos. Lund. In Lyceo Carolino d. XIV Febr. MDCCCXVI*. Pp. 17–24. Berlingianis, Lundae [= Lund].

- Gistel, J.** 1848. *Naturgeschichte des Thierreichs für höhere Schulen*. xvi, 216 pp. R. Hoffmann, Stuttgart.
- Meigen, J.W.** 1820. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Zweiter Theil*. xxxvi, 363 pp. F.W. Forstmann, Aachen.
- Melander, A.L.** 1965. Family Empididae (Empidae, Hybotidae), pp. 446–481. In: Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. (Eds.), *A catalog of the Diptera of the Americas north of Mexico. United States Department of Agriculture, Agricultural Handbook*, **286**: i–iv, 1–1696.
- Poole, R.W.** 1996. Diptera. Pp. 15–604 in Poole, R.W. & Gentili, P. (Eds.), *Nomina Insecta Nearctica. A checklist of the insects of North America*. Volume 3: Diptera, Lepidoptera, Siphonaptera. 1143 pp. Entomological Information Services, Rockville, Maryland.
- Richardson, C.** 1836. [Lexicon]. In: Smedley, E., Rose, H[ugh] J. & Rose, H[enry] J. (eds.), *Encyclopaedia metropolitana: or universal dictionary of knowledge, on an original plan: comprising the twofold advantage of a philosophical and an alphabetical arrangement*. Volume XXII. [Miscellaneous & lexicographical, Vol. 9]. 779 pp. B. Fellows, L. & J. Rivington; Duncan & Malcolm; Suttaby & Co.; E. Hodgson; J. Dowding; G. Lawford; J.M. Richardson; J. Bohn; T. Allman; J. Bain; S. Hodgson; F.C. Westley; L.A. Lewis; T. Hodges; H. Washbourne, London; J.H. Parker; T. Laycock, Oxford; J. & J.J. Deighton, Cambridge.
- Sabrosky, C.W.** 1999. Family-group names in Diptera. An annotated catalog. *Myia*, **10**: 1–360.
- Schiner, J.R.** 1862. *Fauna Austriaca. Die Fliegen. (Diptera). Erster Theil*. [Heft 8, Pp. 657–674, i–lxxx]. C. Gerold's Sohn, Wien.
- Sinclair, B.J. & Cumming, J.M.** 2006. The morphology, higher level phylogeny and classification of the Empidoidea (Diptera). *Zootaxa*, **1180**: 1–172.
- Smith, K.G.V.** 1975. Family Empididae (Empidae, Hybotidae), Pp. 185–211 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region, vol. II. Suborder Brachycera through division Aschiza, suborder Cyclorrhapha*. ix, 459 pp. University of Hawaii Press, Honolulu.
- Smith, K.G.V.** 1980. Family Empididae. Pp. 431–442 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1437 pp. British Museum (Natural History), London.
- Westwood, J.O.** 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.). Pp. 125–154 in: *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects*. 158 pp. Longman, Orme, Brown, Green & Longmans, London.
- Yang D., Zhang K.-Y., Yao G. & Zhang J.-H.** 2007. *World catalog of Empididae (Insecta: Diptera)*. vi, 599 pp. China Agricultural University Press, Beijing.

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Case 3560***Plateosaurus engelhardti* Meyer, 1837 (Dinosauria, Sauropodomorpha): proposed replacement of unidentifiable name-bearing type by a neotype**

Peter M. Galton

*College of Naturopathic Medicine, University of Bridgeport, Bridgeport, CT U.S.A.;
Peabody Museum of Natural History, Yale University, New Haven, CT, U.S.A.
(e-mail: pgalton@bridgeport.edu)*

Abstract. The purpose of this application, under Article 75.5 of the Code, is to conserve the usage of the name *Plateosaurus* Meyer, 1837 (Upper Triassic, Germany), known from numerous articulated skeletons, several with complete skulls, from the Norian *Plateosaurus* bonebeds of Western Europe and Greenland. This was the first non-English, non-avian dinosaur and the second sauropodomorph and Triassic dinosaur to be named. It is proposed to replace the fragmentary and non-diagnostic bones that constitute the type material of *Plateosaurus engelhardti* Meyer, 1837, the type species of *Plateosaurus* Meyer, 1837, with a diagnostic neotype, an almost complete skull and skeleton (SMNS 13200). This specimen has formed the basis for the concept of *P. engelhardti* (the best represented basal sauropodomorph) and ultimately of *Plateosaurus* Meyer, 1837. *Plateosaurus* is the basis for PLATEOSAURIDAE Marsh, 1895 and Plateosauria Tornier, 1913.

Keywords. Nomenclature; taxonomy; Dinosauria; Sauropodomorpha; *Plateosaurus*; *P. engelhardti*; Upper Triassic; Germany; France; Switzerland; Greenland.

1. During the summer of 1834, Johann F.P. Engelhart discovered fossil bones near Heroldsburg near Nürnberg, Bavaria, Germany (probably from a clay pit at the Buchenbühl on the Haidberg; Moser, 2003), in the upper conglomeratic horizon of the Upper Triassic Trossingen Formation. On 19 September 1834 Engelhart exhibited these bones at a congress of German natural scientists in Stuttgart (Engelhart, 1835; Anon., 1835). Christian E.H. von Meyer, one of the attendees at this congress, studied them and subsequently named them *Plateosaurus engelhardti* Meyer, 1837 (p. 316). This original spelling of the specific name is the correct one because Meyer (1837) cited the discoverer's name as Engelhardt (Article 32 of the Code); '*engelharti*' of later authors, beginning with Meyer (1839, p. 77), is an incorrect subsequent spelling (Article 33.3). For a comprehensive discussion of this point, and of the derivation of *Plateosaurus* (plate, Greek, broad area, so 'broadway lizard' not 'flat lizard', Schmidt, 1938, p. 134), see Moser (2003, pp. 13–14, English summary, p. 160).

2. The relevant section of Meyer (1837) was translated by Huxley (1870, pp. 38–39; also Weishampel & White, 2003, p. 159), who first recognized it as a dinosaur. The brief report of Meyer included the locality (Nürnberg) and the horizon (Upper Keuper), features excluded as indications by Article 12.3, and that the material consisted of nearly complete vertebrae and long limb bones (i.e. long bones of the

limbs, not limb bones that are long). He emphasized that the bones ‘come from one of the most gigantic Saurians, which, in light of the heaviness and hollowness [‘Schwere und Hohlheit’] of its limb bones, is related to the *Iguanodon* and *Megalosaurus*, and belongs to the second division of my Saurian system’ (see Meyer, 1832). In this context, heaviness and hollowness, although not diagnostic, are taxonomic characters and thus possibly qualify as a description that makes both the generic and specific names available under Article 12.2.6. Meyer (1839, p. 77) definitely provided a definition of both taxa in the sense of Article 12.2.6 when he mentioned the presence in *Plateosaurus engelharti* [sic] (incorrect subsequent spelling) of a ‘so called cross- or holy-bone [sacrum] originated by fusion of at least three vertebrae, something that is so far entitled only for mammals and is outrageous for a saurus!’ (translation, see Moser, 2003, p. 160). In two later works, Meyer (1841, 1845) mentioned a few vertebral features and included *Plateosaurus* in his Pachypodes (= Dinosauria Owen, 1842), but this does not bear on the nomenclature of the genus and species.

3. The bones from near Heroldsburg were finally described and illustrated by Meyer (1855), who neither in that work nor in his earlier ones indicated whether he considered them to represent one or several individuals. Again without speculating on the number of individuals, Blankenhorn (1898) described the type material at the Universität Erlangen-Nürnberg, Institut für Paläontologie, Germany (UEN) by reference to the figures and description of Meyer (1855). Huene (1908) re-described the material and, based on comparisons with more complete referred skeletons of *Plateosaurus*, excluded three bones as representing a larger individual than the rest. He noted that ‘die übrigen Knochen scheinen einer einzigen Art und wohl auch einen einzigen Individuum anzugehören’ [(the other bones seem to belong to a single species and probably also a single individual), Huene, 1908, p. 68]. His actions are most easily interpreted as the exclusion of extraneous components from an inferred holotype (Article 73.1.5), even though each bone has a separate specimen number with ‘3’ for parts of the femur. Two further skeletal elements were excluded by Galton (1984a, see also Moser, 2003) on grounds of actually being a dermal scute of a proganochelyid turtle and a proximal metatarsal of a theropod dinosaur. Galton (1984a, p. 139, after exclusions; also Weishampel & Chapman 1990, p. 50) referred to the ‘holotype’ of *Plateosaurus engelhardti*, and subsequently noted that the ‘holotype of *Plateosaurus engelhardti* Meyer, 1837 consists of fragmentary postcranial bones’ (Galton, 1997, p. 674; also 2000, p. 236; 2001a). Galton (2000, 2001b) later took a different view, listing the separate skeletal fragments as syntypes, as did Yates (2003). Because the bones were found in a conglomerate, show signs of wear and thus were probably reworked, and display unsuitable proportions between bone pairs, Moser (2003) concluded that no two bones belong to the same individual. Consequently, he designated a ‘lectotype’, the partial sacrum (UEN 552), and seven ‘paralectotype’ bones. Moser (2003) can perhaps be viewed as having further restricted the holotype to the sacrum alone (Article 73.1.5). The precise type status of the original material of *P. engelhardti* will become moot if the proposals in paragraph 14 herein are approved, so the point is not belaboured further here.

4. Rüttimeyer erected *Gresslyosaurus ingens* Rüttimeyer, 1856 (p. 64) based on fragmentary postcranial bones from the Upper Triassic of Niederschönthal, near Basel, Switzerland. Among the bones still available at the Naturhistorisches

Museum, Basel, Switzerland (Huene, 1908; Galton, 1986) is an incomplete sacrum, the form of which (Moser, 2003) indicates that this is a distinct species (Yates, 2007, 2010). This species was first included in *Plateosaurus* by Galton (1986).

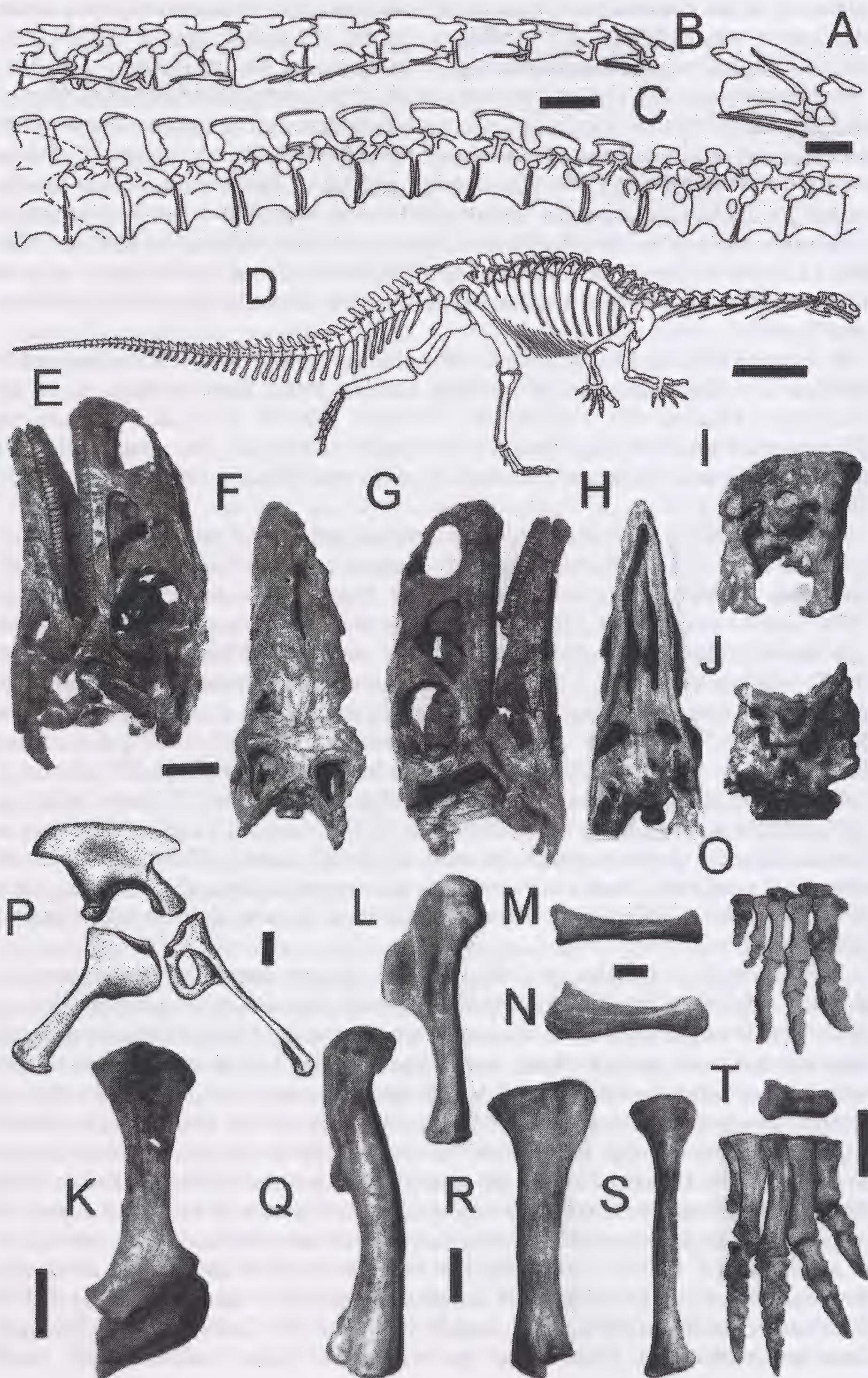
5. Between 1862 and 1932, numerous species (some originally described in different genera) were referred to *Plateosaurus* from the adjacent part of France (Huene, 1908; Galton, 1998) and other parts of Germany (see Galton, 2001a). However, 15 of these taxa are nomina dubia or were incorrectly referred to *Plateosaurus*. These species, which are discussed in detail by Galton (2001a, summary 2001b; see Weishampel & Chapman, 1990, tabs 3.1–3 for earlier referrals and synonymies; also Galton, 1990, tab. 15.1), will not be considered here, just those that are based on diagnostic material that could plausibly serve as a neotype to replace the current holotype of *Plateosaurus engelhardti*.

6. Huene (1905, p. 346) provided a non-illustrated description of an incomplete skeleton as *Plateosaurus erlenbergiensis* Huene, 1905. The holotype is in the Staatliches Museum für Naturkunde, Stuttgart (SMNS 6014) and is from the Trossingen Formation of Erlenberg, Germany; it includes an incomplete skull (palate, jaw bones, braincase) and various postcrania (Huene, 1908; Galton, 1985a, 2001a).

7. Huene (1908, p. 178) described an incomplete postcranial skeleton (SMNS 5717) from the Late Triassic lower Löwenstein Formation (Middle Keuper) of Heslach, Germany, as *Sellosaurus gracilis* Huene, 1908. Huene (1926) referred this species to *Plateosaurus*, as *P. gracilis* (Huene, 1908), and it is a distinct species (Yates, 2003).

8. Jaekel (1913–14) reported the discovery of numerous articulated skeletons from the Trossingen Formation a little south of Halberstadt, Germany. The holotype of *Plateosaurus longiceps* Jaekel, 1913 (June, pl. 3) is now just a complete skull in the Museum für Naturkunde – Leibniz Institute for Research on Evolution and Biodiversity at the Humboldt University, Berlin, Germany (MB R.1937, formerly field number HMN 24) that was subsequently prepared free of matrix (Galton, 1985a, 2001a; Galton & Kermack, 2010, figs. 9F–H). Originally the holotype was an almost complete skeleton, except for most of the tail (Jaekel, 1913, fig. 2), and the associated postcranial bones (18 vertebrae, sacrum with pelvic girdle, femur, tibia, fibula, scapula) mentioned by Huene (1932) have been mislaid or lost (Galton, 2001a).

9. Fraas (1913, November, p. 1100) reported the discovery of an almost complete skeleton (SMNS 13200, Fig. 1), which he named *Plateosaurus trossingensis* Fraas, 1913. This holotype came from the lower bone bed at the Obere Mühle (upper mill) location at Trossingen, Germany (see Schoch, 2011). The stratigraphic level falls within the uppermost unit of the Middle Keuper sequence, but lithologically the bed clearly belongs to the Trossingen Formation (Schoch, 2011). The holotype (SMNS 13200) of *P. trossingensis* is the basis for the objective junior synonyms *P. integer* Fraas in Huene, 1915 (p. 3, no reason given) and *P. fraasianus* Huene, 1932 (p. 140). The latter species was erected to replace *P. trossingensis* Fraas, 1913 which he considered to be a nomen nudum because it was erected without either a description or an illustration. However, as Galton (2001a, p. 481 for English summary of relevant details) noted, Fraas (1913, p. 1100) includes enough information concerning SMNS 13200 to meet the conditions of Article 12.2.6 of the Code. SMNS 13200 was described in detail as *Plateosaurus* sp. by Huene (1926). Analyses of the skulls



(Galton, 1984a, 1985a; as *P. engelhardti*) and femora (Weishampel & Chapman, 1990; as *Plateosaurus* sp.) in the lower bone level at Trossingen showed that only one species is present, contra Huene (1932).

10. Other specimens from Switzerland and Greenland represented by partial, nearly complete, or articulated skeletons have been assigned to *Plateosaurus engelhardti* by Galton (1986), Sander (1992), and Jenkins et al. (1995). Furthermore, all the plateosaurid taxa from France, Germany and Switzerland were listed as junior synonyms of *Plateosaurus engelhardti* Meyer, 1837 by Galton (1990, tab. 15.1). Contrary to this, based on the supposed difference in the form of the sacra compared to that of *P. engelhardti* (UEN 552), Galton (2001a) referred the French, Swiss and German material (except UEN specimens) to *P. longiceps* as the next available species based on diagnostic material, with *P. trossingensis* as a junior synonym (also Galton & Upchurch, 2004; Sereno, 2007). Prieto-Márquez & Norell (2011) agreed but used the older name *P. erlenbergiensis* Huene, 1905 (with *P. longiceps* and *P. trossingensis* as junior synonyms) instead for the remaining German specimens. However, Moser (2003) showed that the sacra are in fact all similar and regarded all the German species of *Plateosaurus* as junior synonyms of *P. engelhardti*. In fact, Moser's (2003) so-called lectotype of *Plateosaurus engelhardti*, the sacrum UEN 552 (photographs Galton, 2000; Moser, 2003) is readily distinguishable from the sacra of the holotypes of *P. gracilis* (Galton, 1984b, 1999; Yates, 2003) and *P. ingens* (Huene, 1908; Galton, 1986; Moser, 2003) but indistinguishable from the Halberstadt sacra referred to *P. longiceps* and the Trossingen sacra, including SMNS 13200, referred to *P. trossingensis* (Moser, 2003; more photographs in Galton, 2001a). Two alternative classifications are thus current. Yates (2007, 2010; also Apaldetti et al., 2011) have recognized three valid species of *Plateosaurus*, with the older *P. gracilis* as the sister group to the more recent *P. engelhardti* and the Swiss *P. ingens*. On the other hand, Galton & Kermack (2010) recognized *P. gracilis* and *P. ingens* but, based on differences in the pterygoid medial process of MB R.1937 is broad, flattened and separated from main body by a deep notch (Barrett & Yates, 2006; Galton & Kermack, 2010) but in SMNS 13200 it forms a semi-circular medial process that wraps hook-like around the basiptyergoid process (Galton, 1984a, 1985a); also the part of the sinuous ridge adjacent to the postero-medial process forms a second prominent semicircular flange in MB R.1937 but not in SMNS 13200], considered *P. longiceps* and *P. trossingensis* to be valid species (also with differences in length of epipophyses of cervical vertebrae 2–6: elongate spikes in Trossingen specimens but rounded knobs in Halberstadt specimens, see Yates, 2003) with *P. engelhardti* as a nomen dubium (as also *P. erlenbergiensis*).

Fig. 1. SMNS 13200, proposed neotype for *P. engelhardti* Meyer, 1837, from the Upper Triassic of Trossingen, Germany. (A–C) vertebrae in right lateral view: (A) atlas and axis; (B) as A with cervicals 3–10 and (C) dorsals 1–15. (D) skeletal reconstruction in running pose, body length about 6.5 m. (E–G) skull and mandible in: (E) left lateral; (F) dorsal and (G) right lateral views. (H–J) skull in: (H) ventral; (I) posterior and (J) posteroventral views. (K–T) right girdle and limb bones in lateral (K, M, N, P–S), medial (L) and dorsal (anterior) views (O, T): (K) scapula and coracoid; (L) humerus; (M) radius; (N) ulna; (O) manus; (P) pelvic girdle; (Q) femur; (R) tibia (left reversed); (S) fibula and (T) astragalus (left reversed) and pes. A–D modified from originals used in Galton (1990), after Huene (1926); E–J modified from originals used in Galton (1984a); for labelled line drawings corresponding to E–J, see Huene (1926) and Galton (1984a). Scale bars represent 50 mm (A, E–J), 100 mm (B–C, K, L–O, P, Q–S, T) and 500 mm (D).

11. *Plateosaurus* is the best represented and best known genus of basal sauropodomorph dinosaur, remains of which are known from over 40 localities in western Europe and Greenland. The situation outlined in the preceding paragraph, concerning the lack of universality regarding valid specific names, requires an identifiable neotype for resolution. Meyer's (1837) description of *Plateosaurus engelhardti* was vague and non-diagnostic; despite this fault, both the generic and specific names have been universally attributed to this work. Some may judge that these few words are too meagre to constitute a 'description' for the purposes of Article 12.2.6; but if the attribution of the name is switched to Meyer (1839), based on the clearly diagnostic feature for the genus and species presented there, viz., a three-vertebrae sacrum, then the specific name will become *engelharti*, as Moser (2003) has shown. This would be potentially confusing and not conducive to universality. Yates (2003, p. 331), noting that the 'syntypes' of *P. engelhardti* are inadequate for diagnosis, remarked that 'the excellent skeleton from Trossingen, SMNS 13200, has formed the basis for the concept of *Plateosaurus* ever since Huene (1926) published his description of it. Here I treat SMNS 13200 as the unofficial holotype of *Plateosaurus engelhardti*, while recognizing that this decision will need to be ratified by the ICZN.'

12. Specimen SMNS 13200 is the basis for the figures of the bones of *Plateosaurus* species in Galton (1990), Galton & Upchurch (2004) and Heerden (1997); Moser (2003) gave photographs of the vertebral column, shoulder girdle and ilium plus stereo photographs of the humerus, femora and tibiae. The complete matrix-free skull (Figs. 1E-J) was illustrated with stereo photographs as preserved (Galton, 1984a, 1985a, b, 2001a, b) and reconstructed in several different views (Romer, 1956, 1966; Galton, 1985a, 1990, 2001b; Carroll, 1988; Heerden, 1997; Wilson & Sereno, 1998; Yates, 2003, 2012; Galton & Upchurch, 2004; Benton, 2005; Sereno, 2007; Paul, 2010). The restoration drawing by Huene (1926) of the skeleton in a bipedal pose has been copied (e.g. Lapparent & Lavocat, 1955; Huene, 1956; Romer, 1956, 1966; Moser, 2003) or modified to a dynamic running pose with the column held more horizontally (Fig. 1D; Weishampel & Westphal, 1986; Galton, 1990, 2000, 2001a, b; Paul, 1997, 2010; Heerden, 1997; Upchurch, 1997; Moser, 2003; Yates, 2003, 2012; Galton & Upchurch, 2004). Consequently, the very well illustrated, associated and nearly complete skeleton SMNS 13200 is the obvious choice for designation as the neotype to replace the inadequate holotype, the sacrum UEN 552, of *Plateosaurus engelhardti*.

13. *Plateosaurus* Meyer, 1837 is the basis for PLATEOSAURIDAE Marsh, 1895 and Plateosauria Tornier, 1913. SMNS 13200 (Fig. 1) has formed the basis for the concept of *Plateosaurus* since its description by Huene (1926) and the basis for *P. engelhardti* since the description of its skull by Galton (1984a). Because the taxonomic identity of the nominal species of *Plateosaurus engelhardti* cannot be determined from its existing name-bearing type, and stability and universality are threatened thereby, the Commission is requested to use its plenary power under Article 75.5 to set aside the existing name-bearing type and designate SMNS 13200 as the neotype.

14. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its specific powers as granted by Article 78.2.3 to confirm that the generic name *Plateosaurus* and the name of its type species, *P. engelhardti*, are both available from Meyer (1837);

- (2) to use its plenary power to set aside all previous type fixations for the nominal species *Plateosaurus engelhardti* Meyer, 1837 and to designate specimen SMNS 13200 in the Stuttgart Museum für Naturkunde as the neotype;
- (3) to place on the Official List of Generic Names in Zoology the name *Plateosaurus* Meyer, 1837 (gender: masculine), type species by monotypy *Plateosaurus engelhardti* Meyer, 1837;
- (4) to place on the Official List of Specific Names in Zoology the name *engelhardti* Meyer, 1837, as published in the binomen *Plateosaurus engelhardti* and as defined by the neotype SMNS 13200 in the Stuttgart Museum für Naturkunde designated in (2) above.

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References

- Anon. 1835. Kurzer Bericht über die in der mineralogisch-geognostischen Sektion der Versammlung Deutscher Naturforscher im September 1834 in Stuttgart abgehandelten Gegenstände. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, **1835**: 46–56.
- Apaldetti, C., Martinez, R.M., Alcober, O.A. & Pol, D. 2011. A new basal sauropodomorph (Dinosauria: Saurischia) from Quebrada del Barro Formation (Marayes-El Carrizal Basin), northwestern Argentina. *Plos ONE*, **6**(11): e26964.
- Barrett, P.M. & Yates, A.M. 2005. New information on the palate and lower jaw of *Massospondylus* (Dinosauria: Sauropodomorpha). *Palaeontologia Africana*, **41**: 123–130.
- Benton, M.J. 2005. *Vertebrate palaeontology*, 3rd edition. 472 pp. Wiley-Blackwell, London.
- Blankenhorn, M. 1898. Saurierfunde im Frankischen Keuper. *Sitzungsberichte der Physikalisch-medizinischen Societat in Erlangen*, **29**(1897): 67–91.
- Carroll, R.L. 1988. *Vertebrate paleontology and evolution*. 698 pp. W.H. Freeman & Co., New York.
- Engelhardt, J.F.P. 1835. [Fossil bones from Keuper marly limestone near Nürnberg]. *Amtlicher Bericht über die Versammlung deutscher Naturforscher und Aerzte zu Stuttgart*, **1834**: 83.
- Fraas, E. 1913. Die neuesten Dinosaurierfunde in der Schwäbischen Trias. *Die Naturwissenschaften* **1**, **45**: 1097–1100.
- Galton, P.M. 1984a. Cranial anatomy of the prosauropod dinosaur *Plateosaurus* from the Knollenmergel (Middle Keuper, Upper Triassic) of Germany. I. Two complete skulls from Trossingen/Württ. with comments on the diet. *Geologica et Palaeontologica*, **18**: 139–171.
- Galton, P.M. 1984b. An early prosauropod dinosaur from the Upper Triassic of Nordwürttemberg, West Germany. *Stuttgarter Beiträge zur Naturkunde, (B)*, **106**: 1–25.
- Galton, P.M. 1985a. Cranial anatomy of the prosauropod dinosaur *Plateosaurus* from the Knollenmergel (Middle Keuper) of Germany. II. All the cranial material and details of soft-part anatomy. *Geologica et Palaeontologica*, **19**: 119–159.

- Galton, P.M. 1985b. Cranial anatomy of the prosauropod dinosaur *Sellosaurus gracilis* from the Middle Stubensandstein (Upper Triassic) of Nordwürttemberg, West Germany. *Stuttgarter Beiträge zur Naturkunde (B)*, **118**: 1–39.
- Galton, P.M. 1986. Prosauropod dinosaur *Plateosaurus* (= *Gressylosaurus*) (Saurischia: Sauropodomorpha) from the Upper Triassic of Switzerland. *Geologica et Palaeontologica*, **20**: 167–183.
- Galton, P.M. 1990. Basal Sauropodomorpha - Prosauropoda. Pp. 320–344 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 1st edition*. University of California Press, Berkeley.
- Galton, P.M. 1997. Comments on sexual dimorphism in the prosauropod dinosaur *Plateosaurus engelhardti* (Upper Triassic, Trossingen). *Neues Jahrbuch für Geologie und Paläontologie Monatshefte*, **1997**: 674–682.
- Galton, P.M. 1998. The prosauropod dinosaur *Plateosaurus* (*Dimodosaurus*) *poligniensis* (Pidancet & Chopard, 1862) (Upper Triassic, Poligny, France). *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Abhandlungen*, **207**: 255–288.
- Galton, P.M. 1999. Sex, sacra and *Sellosaurus gracilis* (Saurischia, Sauropodomorpha, Upper Triassic, Germany) - or why the character 'two sacral vertebrae' is plesiomorphic for Dinosauria. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Abhandlungen*, **213**: 19–55.
- Galton, P.M. 2000. The prosauropod dinosaur *Plateosaurus* Meyer, 1837 (Saurischia: Sauropodomorpha). I. The syntypes of *Plateosaurus engelhardti* Meyer, 1837 (Upper Triassic, Germany), with notes on other European prosauropods with 'distally straight' femora. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, **216**: 233–275.
- Galton, P.M. 2001a. The prosauropod dinosaur *Plateosaurus* Meyer, 1837 (Saurischia: Sauropodomorpha; Upper Triassic). II. Notes on the referred species. *Revue de Paléobiologie*, **20**: 435–502.
- Galton, P.M. 2001b. Prosauropod dinosaurs from the Upper Triassic of Germany. Pp. 25–92 in: Colectivo Arqueológico-Paleontológico Salense (Eds.): *Actas de las I Jornadas de Paleontología de dinosaurios y su entorno*. Junta de Castilla y León, Salas de los Infantes (Burgos, España).
- Galton, P.M. & Kermack, D. 2010. The anatomy of *Pantydraco cadacus*, a very basal sauropodomorph dinosaur from the Rhaetian (Upper Triassic) of South Wales, UK. *Revue de Paléobiologie*, **29**: 341–404.
- Galton, P.M. & Upchurch, P. 2004. Prosauropoda. Pp. 232–258 in Weishampel, D.B., Dodson, P. & Osmólska, H. (Eds.), *The Dinosauria, 2nd edition*. University of California Press, Berkeley.
- Heerden, J. van. 1997. Prosauropods. Pp. 242–263 in Farlow, J.O. & Brett-Surman, M.K. (Eds.), *The complete dinosaur*. Indiana University Press, Bloomington.
- Huene, F. von. 1905. Über die Trias-Dinosaurier Europas. *Zeitschrift der Deutschen geologischen Gesellschaft, Berlin*, **57**: 345–349.
- Huene, F. von. 1908. Die Dinosaurier der europäischen Triasformationen mit Berücksichtigung der aussereuropäischen Vorkommnisse. *Geologische und Paläontologische Abhandlungen, Supplement*, **1**: 1–419, Atlas.
- Huene, F. von. 1915. Beiträge zur Kenntnis einiger Saurischier der schwäbischen Trias. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie*, **1915**: 1–27.
- Huene, F. von. 1926. Vollständige Osteologie eines Plateosauriden aus der Schwäbischen Trias. *Geologische und Paläontologische Abhandlungen, N.F.*, **15**: 129–179.
- Huene, F. von. 1932. Die fossile Reptil-Ordnung Saurischia, ihre Entwicklung und Geschichte. *Monographien zur Geologie und Paläontologie*, (1)**4**: 1–361, Atlas.
- Huene, F. von. 1956. *Paläontologie und Phylogenie der Niederen Tetrapoden*. 716 pp. Fischer, Jena.
- Huxley, T.H. 1870. On the classification of the Dinosauria, with observations on the Dinosauria of the Trias. *Geological Society of London, Quarterly Journal*, **26**: 32–51.
- Jaekel, O. 1913–14. Über die Wirbeltierfunde in der oberen Trias von Halberstadt. *Paläontologische Zeitschrift*, **1**(1): 155–160 (1913), (2): 161–215 (1914).

- Jenkins, F.A., Jr., Shubin, N.H., Amaral, W.W., Gatesy, S.M., Schaff, C.R., Clemmensen, L.B., Downs, W.R., Davidson, A.R., Bonde, N. & Osbraek, F. 1995. Late Triassic continental vertebrates and depositional environments of the Fleming Fjord Formation, Jameson Land, East Greenland. *Meddelelser om Grønland, Geoscience*, **32**: 1–25.
- Lapparent, A.-F. de & Lavocat, R. 1955. Dinosauriens. In Piveteau, J. (Ed.), *Traité de Paléontologie*, **5**: 785–962.
- Marsh, O.C. 1895. On the affinities and classification of the dinosaurian reptiles. *American Journal of Science*, (3)**50**: 483–498.
- Meyer, H. von. 1832. *Palaeologica zur Geschichte der Erde und ihrer Geschöpfe*. 560 pp. Schmerber, Frankfurt am Main.
- Meyer, H. von. 1837. [Brief. an Prof. Bronn vom 4. April 1837]. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, **1837**: 316–317.
- Meyer, H. von. 1839. [Brief an Prof. Bronn vom 1. Dezember 1838]. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, **1839**: 76–79.
- Meyer, H. von. 1841. *Thaumatosauros oolithicus*, der fossile Wunder-Saurus aus dem Oolith. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, **1841**: 176–184.
- Meyer, H. von. 1845. System der fossilen Sauria. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, **1845**: 278–285.
- Meyer, H. von. 1855 (in 1847–55). *Zur Fauna der Vorwelt. [II. Abtheilung.] Die Saurier des Muschelkalkes mit Rücksicht auf die Saurier aus Buntem Sandstein und Keuper*. vii + 167 pp. Keller, Frankfurt am Main.
- Moser, M. 2003. *Plateosaurus engelhardti* Meyer, 1837 (Dinosauria: Sauropodomorpha) aus dem Feuerletten (Mittelkeuper; Obertrias) von Bayern. *Zitteliana, B*, **24**: 3–186.
- Owen, R. 1842. Report on British fossil reptiles. Part II. *British Association for the Advancement of Science, Annual Report for 1841*, **11**: 60–204.
- Paul, G. 1997. Dinosaur models: the good, the bad, and using them to estimate the mass of dinosaurs. Pp.129–154 in: *Proceedings of Dinofest International, 1997*. Dinofest International, Tempe, Arizona.
- Paul, G.S. 2010. *The Princeton field guide to dinosaurs*. 320 pp. Princeton University Press, Princeton.
- Prieto-Márquez, A. & Norell, M.A. 2011. Redescription of a nearly complete skull of *Plateosaurus* (Dinosauria: Sauropodomorpha) from the Late Triassic of Trossingen (Germany). *American Museum Novitates*, **2727**: 1–58.
- Romer, A.S. 1956. *Osteology of the reptiles*. 772 pp. University of Chicago Press, Chicago.
- Romer, A.S. 1966. *Vertebrate paleontology*, 3rd edition. 468 pp. University of Chicago Press, Chicago.
- Rütimeyer, L. 1856. [Reptilienknochen aus dem Keuper von Liestal.] *Verhandlungen der schweizerischen naturforschenden Gesellschaft*, **41**: 62–64.
- Sander, P.M. 1992. The Norian *Plateosaurus* bonebeds of central Europe and their taphonomy. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **93**: 255–299.
- Schmidt, M. 1938. *Die Lebewelt unser Trias. Nachtrag 1938*. 144 pp. Hohenlohe'sche Buchhandlung F. Rau, Oehringen.
- Schoch, R.R. 2011. Tracing Seeman's dinosaur excavation in the Upper Triassic of Trossingen: his field notes and the present status of the material. *Palaeodiversity*, **4**: 245–282.
- Sereno, P. 2007. Basal Sauropodomorpha: historical and recent phylogenetic hypotheses, with comments on *Ammosaurus major* (Marsh, 1889). *Special Papers in Palaeontology*, **77**: 261–289.
- Tornier, G. 1913. Reptilia (Paläontologie). *Handwörterbuch der Naturwissenschaften*, **8**: 337–376.
- Upchurch, P. 1997. Prosauropoda. Pp. 598–607 in Currie, P.J. & Padian, K. (Eds.), *Encyclopedia of dinosaurs*. Academic Press, London.
- Weishampel, D.B. & Chapman, R.E. 1990. Morphometric study of *Plateosaurus* from Trossingen (Baden-Württemberg, Federal Republic of Germany). Pp. 43–51 in Carpenter, K. & Currie, P.K. (Eds.), *Dinosaur systematics. Approaches and perspectives*. Cambridge University Press, Cambridge.

- Weishampel, D.B. & Westphal, F.** 1986. Die Plateosaurier von Trossingen im Geologischen Institut der Eberhard-Karls-Universität Tübingen. *Ausstellungskataloge der Universität Tübingen*, **19**: 1–27.
- Weishampel, D.B. & White, N.M.** 2003. *The dinosaur papers 1676–1906*. 524 pp. Smithsonian Books, Washington.
- Wilson, J.A. & Sereno, P.C.** 1998. Early evolution and higher-level phylogeny of sauropod dinosaurs. *Society of Vertebrate Paleontology, Memoir*, **5**: 1–68.
- Yates, A.M.** 2003. The species taxonomy of the sauropodomorph dinosaurs from the Löwenstein Formation (Norian, Late Triassic) of Germany. *Palaeontology*, **46**: 317–337.
- Yates, A.M.** 2007. The first complete skull of the Triassic dinosaur *Melanorosaurus* Haughton (Sauropodomorpha: Anchisauria). *Special Papers in Palaeontology*, **77**: 9–55.
- Yates, A.M.** 2010. A revision of the problematic sauropodomorph dinosaurs from Manchester, Connecticut and the status of *Anchisaurus* Marsh. *Palaeontology*, **53**: 739–752.
- Yates, A.M.** 2012. Basal Sauropodomorpha: the ‘prosauropods’. Pp. 422–443 in Brett-Surman, M.K., Holtz, T.R. & Farlow, J.O. (Eds.), *The complete dinosaur, 2nd edition*. Indiana University Press, Bloomington.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on *Turbo bidens* Linnaeus, 1758 (Gastropoda, CLAUSILIIDAE): request for setting aside the neotype

(Case 3581: see BZN 69: 85–87)

Dietrich Kadolsky

Beneath the Surface Geoconsultants Limited

66 Heathhurst Road, Sanderstead, Surrey CR2 0BA, U.K.

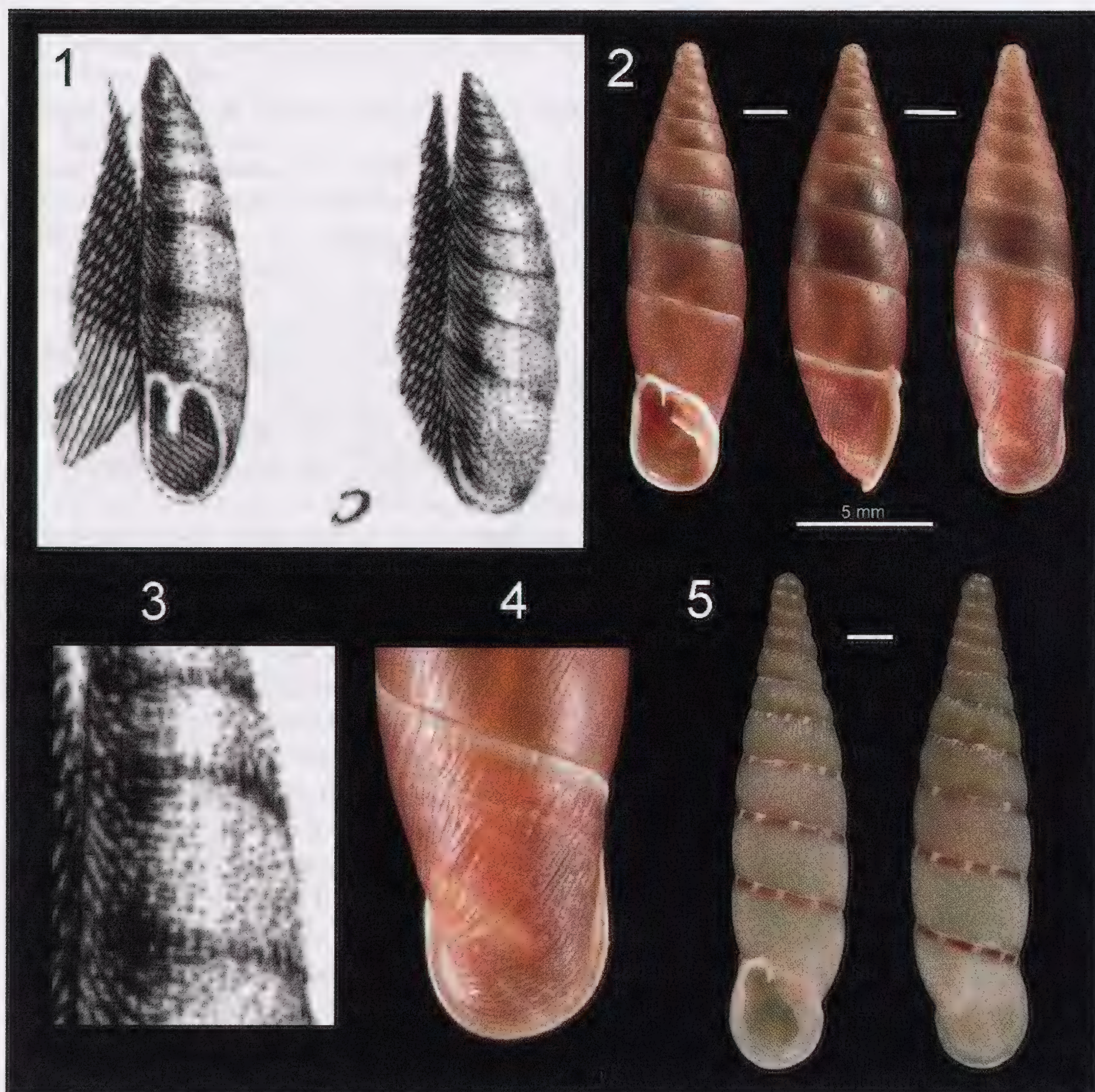
(e-mail: kadolsky@btsgeo.com)

Welter-Schultes bases his application to set aside the neotype of *Turbo bidens* Linnaeus, 1758, as proposed by Kadolsky (2009), on a distorted presentation of the facts of the matter, which – if taken on its own – will make an informed decision of the Commission impossible. Statements fundamental to the case are presented as certainties when they are either non-unique interpretations or even contrary to the facts of the case, or they are omitted altogether.

In Welter-Schultes' paragraph (1) every sentence is factually incorrect:

'Linnaeus (1758, p.767) established *Turbo bidens* with a description and a bibliographical reference to a figure of a specimen collected in Italy near Florence (Gualtieri, 1742, Tab. 4, Fig. C) that did not match the description.' Here, as well as throughout his application, he repeats the often published claim that Linnaeus (1758) meant *Papillifera papillaris* (Müller, 1774) when he established *Turbo bidens*. In order to reconcile the incompatibility of Linnaeus' definition with the characters of *Papillifera papillaris*, authors claimed that Linnaeus' descriptive term 'sutura subcrenata' referred to the subsutural papillae of *Papillifera papillaris*, and that Linnaeus erroneously quoted Gualtieri's Figure C when he meant Figures D and/or E, which both illustrate *Papillifera papillaris*. In so doing, authors overlooked or ignored a) that Gualtieri's Fig. C does clearly show a subcrenulate suture (see Figs. 1, 3); and b) that Linnaeus did not mention the conspicuous colour pattern of *P. papillaris* shells which consists of a reddish brown subsutural band interrupted by white papillae (see Fig. 5). None of the authors who claimed that *Turbo bidens* was conspecific with *Papillifera papillaris* commented on why the subcrenulate suture depicted in Gualtieri's Fig. C should have been incorrectly described by Linnaeus with the words 'sutura subcrenata', or they even denied their existence, e.g. Schröter (1784). At the heart of this error lies the semantic failure of several authors to distinguish between the descriptive terms crenatus, –a, –um (referring to the shape of the suture) and papilla (a rounded raised structure on the surface of shell); see also Giusti & Manganelli (2005, p.131). Consequently, there is no mismatch between diagnosis and cited figure. Further, Gualtieri did not provide a locality; Linnaeus gave merely southern Europe.

'Linnaeus (1767, p. 1240) repeated the information in the same form and added a reference to another figure which did match the description (Bonanno, 1684, Cl. 3, Fig. 41).' The author's name is actually Buonanni. Linnaeus' diagnosis does not cite the subsutural row of dots depicted by Buonanni, who may have lumped several species together: his text describes the brownish subsutural band and white papillae of *P. papillaris*, but his figure shows a shell with more numerous and smaller dots than *P. papillaris* has, which are, moreover, dark, and the brown subsutural band of *P. papillaris* is also lacking. Various Italian clausiliid species in the genera *Siciliaria*, *Delima* and *Charpentieria* have small white subsutural papillae. A fortiori, the



Figs. 1-5. 1. Copy of Gualtieri's Fig. C (1742, pl. 3), cited by Linnaeus (1758) as an illustration of his *Turbo bidens*. The figure is rotated. 2. *Cochlodina bidens* (Linnaeus, 1758) (syn. *C. incisa* (Küster, 1876)). Neotype proposed by Kadolsky (2009). Shell height 16.4 mm. Florence, Giardino di Boboli (Museo di Storia Naturale degli Studi di Firenze, Sezione Zoologica 'La Specola', no. 24438). Photos courtesy G. Manganelli (Siena). 3. Detail of Gualtieri's Fig. C, showing the subcrenulate suture in detail. 4. Detail of the specimen in Fig. 2, showing extremely fine vestiges of sutural crenulations. 5. *Papillifera papillaris* (Müller, 1774). Neotype proposed by Giusti & Manganelli (2005). Shell height 15 mm. Florence, Giardino di Boboli (Museo di Storia Naturale degli Studi di Firenze, Sezione Zoologica 'La Specola', no. 24432). Photos courtesy G. Manganelli (Siena).

reference is not part of the original publication of the nominal species *Turbo bidens* and hence irrelevant to its identity.

'The contradiction was discovered a few years later by Schröter (1784) who observed that Gualtieri (1742) had indeed given a figure of the species that matched the Linnean description but that was not Fig. C but Fig. E of the same plate. Schröter was the first to assume that Linnaeus (1758) had made a mistake and cited the incorrect figure.' There is no contradiction, as already discussed. Schröter (1784, pp. 55–56) used for both crenulations and papillae the German term 'Einkerbungen'

(literally, ‘incisions’), and it seems that due to this inaccurate terminology he came to his erroneous conclusion. Furthermore, Schröter overlooked or ignored the fact that Gualtieri’s Figure C does show a subcrenulate suture.

In paragraph 3, Welter-Schultes cites Hanley’s (1855) statements about a specimen of *Papillifera papillaris* being present in the Linnean collection as proof that Linnaeus did indeed mean *Papillifera papillaris* when describing *Turbo bidens*. Hanley actually writes: ‘Of that genus [*Clausilia*] I found three or four species in the collection (some possibly added since), of which one alone agrees with the expression ‘sutura subcrenata’...’ Unfortunately Hanley did not identify the other two or three clausiliid species in the Linnean collection, and he, too, misapplied the Linnean term ‘sutura subcrenata’ to a papillate suture. Considering the considerable ‘mismanagement’ of Linnaeus’ shell collection described by Dance (1967) and acknowledged by Welter-Schultes himself, it remains uncertain whether Linnaeus’ syntypes of *Turbo bidens* were either a mixture of several clausiliid species including *Papillifera papillaris*, or whether *P. papillaris* was added later, either by Linnaeus himself or someone else. We can only interpret what has been written in the original publication of *Turbo bidens*, and this excludes *P. papillaris* from being considered as the species described and referenced by Linnaeus, 1758. Hanley’s statements are also discussed by Kadolsky (2009, p. 22–23).

In paragraph 4, Welter-Schultes states: ‘This decision [i.e. Opinion 2176] implied that the name *Turbo bidens* should be used for *Helix papillaris*, the identity of which had nowhere been disputed.’ Article 80.5 of the Code states: ‘An Opinion applies only to the particular case before the Commission and is to be rigidly construed; no conclusions other than those expressly specified are to be drawn from it.’ The ruling concerning *Helix papillaris* Müller reads: ‘It is hereby ruled that the specific name *papillaris* Müller, 1774, as published in the binomen *Helix papillaris*, is not conserved.’ The name is not suppressed, nor is there any ruling affecting the identity of *Turbo bidens* Linnaeus, 1758 given. Considering that the Commission had been advised that

- (a) the nominal species *Turbo bidens* and *Helix papillaris* in their original concepts are not conspecific (BZN 62(3): 131; 63(2): 130–131; 63(3): 200);
- (b) the neotype proposed by Falkner et al. (2002), apart from not agreeing with the original diagnosis and bibliographic reference of Linnaeus, 1758, was Gualtieri’s illustration of a specimen (1742, Fig. E) of *Papillifera papillaris* without a location, which no longer exists. Thus, this neotype designation was invalid under the Code, Article 75.3 (BZN 62(3): 131; 63(1): 47);

the ruling concerning *Helix papillaris* was understood by Kadolsky (2009) to mean that the Commission considered it unnecessary or unwarranted to suppress the name *Turbo bidens* Linnaeus, 1758, in order to protect the name *Helix papillaris* Müller, 1774, as proposed by Giusti & Manganelli, 2005, because either, any threat to the name *Helix papillaris* came only from misidentifications of the name *Turbo bidens* (such as that perpetuated by Falkner et al. (2002) and Welter-Schultes), and not from its real identity; or, if they were indeed synonymous, *Turbo bidens* should not be suppressed because it had been used in several modern publications as valid. This interpretation of the ruling obviously contradicts the statement in the abstract of Opinion 2176, which cites *Helix papillaris* as a subjective synonym of *Turbo bidens*. This statement can only be regarded as a misunderstanding or error, as nothing had

been submitted to the Commission to justify declaring *Turbo bidens* Linnaeus and *Helix papillaris* Müller subjective synonyms (see above). A fortiori, a pronouncement on subjective synonymy is a taxonomic judgment, which is outside the remit of the Code (Principles: items 1, 3 and 4). To ignore the Commission's statement about the subjective synonymy of *Turbo bidens* and *Helix papillaris* was therefore considered by Kadolsky (2009) as being in accordance with the Principles of the Code, even more so as this statement was not backed up by a neotype fixation for *Turbo bidens* in the ruling given in Opinion 2176. The neotype selection by Kadolsky (2009) was an attempt at a nomenclatural solution which honoured Opinion 2176 (rigidly construed) as well as the taxonomic meaning of the original definition of *Turbo bidens* Linnaeus, 1758 and to protect the well-known specific name *Cochlodina laminata* (Montagu, 1803) (see next paragraph).

In his paragraph 6, Welter-Schultes states: 'Since the proposal of suppression of *Turbo bidens* was rejected and the identity of the taxon was nowhere disputed, there was no exceptional need for selecting a neotype (Article 75.3 of the Code).' This statement is completely untrue. The varying identifications of *Turbo bidens* have been discussed, i.a. by Kadolsky (2009) which Welter-Schultes completely ignores. In summary, *Turbo bidens* Linnaeus, 1758 had been identified with the following clausiliid species:

Alinda biplicata (Montagu, 1803) by Pulteney (1799);

Clausilia bidentata (Strøm, 1765) by Montagu (1803) and Turton (1831);

Cochlodina laminata (Montagu, 1803) by Müller (1774), Pennant (1777), Draparnaud (1805), Gray in Turton (1840), von Martens (1860), Pilsbry (1922), Forcart (1965) and many others, although mostly before 1848;

Papillifera papillaris (Müller, 1774) by, e.g. Pfeiffer (1848) and the majority of subsequent authors until the paper of Forcart (1965). After that date, usages of the names *papillifera* and *bidens* for the same species coexist to the present day.

Cochlodina sp., probably *C. incisa* (Küster, 1876) by Giusti & Manganelli (2005).

Cochlodina incisa by Kadolsky (2009).

Of the subsequent identification attempts of *Turbo bidens* that with *Cochlodina laminata* is significant. Müller was a contemporary of Linnaeus; he communicated with him and sent him specimens (Dance, 1967). It is conceivable that Müller provided Linnaeus with specimens of *Cochlodina laminata*, which he collected in Frederiksdal near Copenhagen, Denmark, or assured himself through inquiries from Linnaeus of the identity of Linnaeus' *Turbo bidens*.

Although in this author's opinion this is the most plausible scenario, it needs to be stressed that this is merely a possibility. For conclusions we are left to interpret only what was written by Linnaeus.

H. Nordsieck (online, unpublished) points out that the shells of *Cochlodina laminata* (Montagu, 1803) and *C. bidens* (syn. *C. incisa*) are very similar, and cannot be differentiated by characters of the suture. While this is correct, it is unlikely that Gualtieri (1742) collected *C. laminata* in Italy, where it is restricted to montane regions (Manganelli, in litt. 2012). The name *Cochlodina laminata* has been placed on the Official List in Opinion 336 (Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature 10: 77–108, March 1955); it is widely and uncontroversially used and would be protected by the neotype selection by Kadolsky (2009) for *Cochlodina bidens*.

Also in his paragraph 6, Welter-Schultes partly cites unpublished objections by H. Nordsieck (online, undated) against Kadolsky's neotype selection. Nordsieck declared Kadolsky's neotype designation invalid because the neotype specimen was alleged to disagree with Gualtieri's Fig. C cited by Linnaeus. Concerning the subcrenulate suture of *Turbo bidens*, Nordsieck passes over the fact that Gualtieri's Fig. C shows it, and argues instead: '... no author has ever described any species of *Cochlodina* in such terms [i.e. having a subcrenulate suture]'. The argument is specious as a crenulate or subcrenulate suture results from the ribbing of the shell. If a shell is described as ribbed, there is no need to mention that the suture is crenulate as this is implied. Several species of *Cochlodina* are ribbed (contrary to Nordsieck's statements) and hence have a crenulate or subcrenulate suture. A fortiori, the writings of (unspecified) subsequent authors are irrelevant to the case. Linnaeus may have thought the character of the suture was peculiar because Gualtieri's figure shows faint crenulations but no ribs. The neotype of *Turbo bidens* (Kadolsky 2009: Figs. 3b, 4) shows vestiges of ribs which are strongest at the sutures and form very faint crenulations there. No doubt Gualtieri's crenulations are drawn inaccurately and exaggerated, but they do exist.

Another reason given by Nordsieck to reject the neotype of *Turbo bidens* was that only Gualtieri's figure D, representing *Papillifera papillaris*, showed the two 'teeth' in the aperture which Linnaeus mentioned in his diagnosis. This difference is obviously due to the inaccuracy of Gualtieri's figures: The apertural lamellae of Figures D and E, which both represent *Papillifera papillaris*, are drawn very differently in both cases and are unrealistic in both. This shows that the artist did not attempt an accurate depiction of the apertural lamellae of *P. papillaris*, and there is no reason to assume that the illustration of the *Cochlodina* species in Figure C is any more accurate. Also, no South European clausiliid species is known which shows exactly the lamellae configuration shown in Fig. C.

In summary, Welter-Schultes aims to influence a decision of the Commission without disclosing the many facts which undermine his case seriously. Of course the Commission could still vote for Welter-Schultes' request to make *Turbo bidens* and *Helix papillaris* objective synonyms, but then this should be done in the full knowledge of the facts. Such a decision requires the Plenary Powers to set aside the provisions of Article 75.3.5, and would replace the name *P. papillaris* (Müller) – well established in current literature and without any dispute about its identity – with *P. bidens* which was certainly not Linnaeus' species concept and about whose identity published opinion is divided up to this day. The only advantage of such action would be to prevent the name *Cochlodina incisa* (Küster, 1876) becoming a junior subjective synonym of *Turbo bidens* Linnaeus, 1758. The name *Cochlodina incisa* is not often cited in modern literature, so that Article 23.9 cannot be applied to it. The name *P. papillaris* has a far greater claim for protection than *C. incisa*. It is up to the Commission to decide whether the historical truth (i.e. the identity of *Turbo bidens*) should be arbitrarily disregarded to protect *C. incisa*, and the completely uncontroversial name *Papillifera papillaris* which is well established in modern literature is to be made a junior synonym of the name *Turbo bidens*, which throughout its long history up to the present day has been associated with conspicuously different species and erroneous interpretations.

An alternative solution is here submitted for consideration by the Commission, which would not require the use of plenary power:

- (1) to place the name *Papillifera papillaris* (Müller, 1774), as published in the binomen *Helix papillaris* and defined by a neotype (Giusti & Manganelli, 2005: 132, Fig. on p.133) on the Official List of Specific Names in Zoology;
- (2) to amend the entry on the Official List of Specific Names in Zoology of the name *Turbo bidens* Linnaeus, 1758 to read: *bidens*, *Turbo*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 767, as defined by a neotype proposed by Kadolsky, 2009 (pp. 27–28, Figs. 3b, 4) (Gastropoda).

Additional references

- Draparnaud, J.P.R.** 1805. *Histoire naturelle des mollusques terrestres et fluviatiles de la France*. 8, 165 pp., 13 pl. Paris.
- Falkner, G., Ripken, T.E.J. & Falkner, M.** 2002. Mollusques continentaux de France. Liste de référence annotée et bibliographie. *Patrimoines naturels*, **52**: 1–350. Paris.
- Martens, E. v.** 1860. *Die Heliceen, nach natürlicher Verwandtschaft systematisch geordnet, Zweite Ausgabe, nach dem hinterlassenen Manuskript [von J. C. Albers] besorgt von Eduard von Martens*. xviii, 360 pp. Wilhelm Engelmann, Leipzig.
- Montagu, G.** 1803. *Testacea Britannica or natural history of British shells, marine, land, and fresh-water, including the most minute: systematically arranged and embellished with figures*. xxxviii, 606 pp., 16 pls. J. White, London.
- Nordsieck, H.**, undated [post X. 2009]. *Papillifera bidens* (Linné 1758) (Clausiliidae, Aloiinae), a common, but little known species. <http://www.hnords.de>.
- Pennant, T.** 1777. *British Zoology*. 4. *Crustacea. Mollusca. Testacea*. 135 pp., index of plates, 93 pls. Benj. White, London.
- Pfeiffer, L.** 1847–1848. *Monographia Heliceorum viventium sistens descriptiones systematicas et criticas omnium huius familiae generum et specierum hodie cognitarum*. **1**(1): 1–160 (1847) [before 22.10.1847]; (2): 161–321 (1847); (3): 321–484 (1848). Lipsiae.
- Pilsbry, H.A.** 1922. Types of Férussac's subgenera of *Helix*. *Nautilus*, **36**(1): 31–32.
- Pulteney, R.** 1799. *Catalogues of the birds, shells and some of the more rare plants of Dorsetshire. From the new and enlarged edition of Mr. Hutchins's history of that county*. 92 pp. J. Nichols, London.
- Turton, W.** 1840. *A manual of the land and fresh-water shells of the British Islands, with figures of each of the kinds. A new edition, thoroughly revised and much enlarged, by John Edward Gray*. 324 pp., 12 pls. Longman, Orme, Brown, Green & Longmans, London.

**Comment on *Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE):
request for a ruling on the availability of the generic name**
(Case 3518; see BZN 68: 97–104, 282–292; 69: 124–127)

Dietrich Kadolsky

66 Heathhurst Road, Sanderstead, Surrey CR2 0BA, U.K.

(e-mail: kadolsky@btsgeo.com)

While Altaba's comment (BZN 68: 283–292) provides interesting historical data on the nominal taxon *Cornu copiae* Born, 1778, his conclusions on the nomenclatural status of the nominal genus *Cornu* Born, 1778 are based on erroneous statements about the original publication, an unlikely synonymisation and on assumptions for which no evidence is presented. It is thus that he can conclude: 'It is therefore my opinion that the Commission should not rule on Case 3518 as proposed by Cowie. The proposal to make *Cornu* available is not based on actual facts, because *Cornu copiae* was based on a teratological specimen known from the start as such. Therefore, the current Code solves this case without any extraordinary ruling'.

Contrary to this assertion, there is not a word in the original publication to indicate or even just hint that Born described a misshapen individual of *Helix aspersa* knowingly as such. The genus *Cornu* and its sole species *copiae* are presented in exactly the same manner as all the other genera and species, with diagnoses in Latin and German. The nominal species itself is referred to as 'Art' in the German text. In biology, this term is traditionally used in the sense of 'species', and in general parlance in the sense of 'kind', for example as in 'all kinds of books'. Thus, it is used for a group of entities with shared characteristics within a wider group, but not for individual entities. Even if the use of 'Art' in Austrian German of 1778 would have been somewhat different from today's, it cannot be concluded that it could have referred to an individual deformation. It is an unproven allegation that Born should have proposed a new genus and species for an individual which he knew belonged to an already named species in an already named genus.

Altaba (BZN 68, p. 285) resorts to the original description of *Helix scalaris* Müller, 1774 to support his assertions: 'Likewise, Born's *Cornu copiae* appears to be a junior synonym of *H. scalaris*. [. . .] However, because from its description it [i.e. *Cornu copiae*] appears to be the same as *H. scalaris* Müller, 1774, and given that the latter was clearly stated to be an individual, albeit splendid aberration, it follows that *Cornu copiae* is indeed based on a teratological specimen that was known as such.' Again, there is not a word or hint in Müller's text that he considered his *Helix scalaris* an 'aberration' of any other species. As Altaba quotes Müller's text verbatim, it remains an enigma how he could have concluded the opposite. Concerning the identity of *Helix scalaris* Müller, Born stated that his *Cornu copiae* was probably a different species. Müller himself described *Helix scalaris* as having the 'colour and substance' of *Helix pomatia* Linnaeus, 1758. He also mentioned a calcareous operculum formed for hibernation, which *Helix pomatia* produces, but *Cornu aspersum* does not. Müller described both *Helix pomatia* Linnaeus, 1758 and *Helix aspersa* Müller, 1774 in his work, and it is unlikely that he confused the 'colour and substance' of both species, which are clearly different. Further, Müller mentioned other characters which

indicate his *Helix scalaris* had a very different aspect from Born's *Cornu copiae* (e.g. 5 whorls, umbilicus covered by columellar lip).

Altaba's discussion of the Salvador collection and of the origins of the collection of the Imperial Court Museum in Vienna, on which Born (1778, 1780) based his work, is valuable, but his final conclusions are purely conjectural: 'The Vienna and Barcelona cornucopiods may [have] come from the same population. [...] The cornucopiod shells were an extremely rare and sought after curiosity, and it is quite likely that both Argenville and Baillou obtained them from the Salvadors. At any rate, what the Salvador cornucopiod proves is that the teratological nature of such a land shell was public knowledge among learned naturalists of the Enlightenment. All the evidence suggests that Born must have been aware of the fact that his *Cornu copiae* was representing a teratological (and splendid) variation.' Not a shred of evidence is presented by Altaba to support these suppositions and conclusions: it is not proven that Salvador's and Born's specimen came from the same population; it is not proven that Baillou obtained the type specimen of *Cornu copiae* from the Salvadors, but if he did, it is not proven that Salvador's opinion about the teratological nature of the specimen was communicated to Born, and if it were, Born did obviously not agree with it.

Further in Altaba's last paragraph: 'Moreover, the use of *Cornu* (instead of *Cryptomphalus*) has been promoted by a minority of authors in the last decade, on the basis of mistaken reading of the literature, no consultation of type material, and forced interpretation of early zoological nomenclature. Such a proposal would vulnerate stability, unicity and universality of the names of animals, and should thus be disregarded.'

It is correct that documentation of the type material had been lacking when the name *Cornu* was first revived (it is now illustrated by Schileyko, 2006 and Altaba, BZN 68, p. 286), but it needs the kind of 'forced interpretation' applied by Altaba himself to conclude that authors accepting the name *Cornu* as valid did so on the basis of a mistaken reading of the literature. Concerning nomenclatural stability, it is at present non-existent: Altaba himself notes that the species *aspersa* Müller is in current literature attributed to four different nominal genera. Of these, *Helix* Linnaeus, 1758 can probably be disregarded for taxonomical reasons. The remaining instability refers to the taxonomic question of whether *Cantareus* Risso, 1826 and *Cornu* Born, 1778 (or its subjective synonym *Cryptomphalus* Charpentier, 1837) are separate genera or not. The aim of Cowie's proposal is to eliminate the nomenclatural uncertainty resulting from differing interpretations of Article 1.3.2 as applied to *Cornu*. If *Cornu* were confirmed by the Commission as an available name, the binomen of the most common and most widespread species in this group would for priority reasons be fixed as *Cornu aspersum*, regardless of whether *Cantareus* is treated as congeneric or not. As it is extremely unlikely that an even earlier applicable genus-group name exists, the name *Cornu aspersum* would become invariable and thus truly stable, regardless of any future changes in taxonomic assessment.

In summary, Altaba's conclusions are not borne out by the facts presented by him, nor by the contents of Born's and Müller's publications. Cowie's proposal is, in my opinion, in agreement with the historical facts, and with the Code, and will lead to the greatest possible nomenclatural stability. My original support (BZN 68, p. 282) for Cowie's proposal therefore stands.

In another comment, Welter-Schultes & Audibert (BZN 69: 124–127) suggest: ‘Not regarding *Cornu* as available would probably be the best solution.’ This conclusion is not based on the content of the original publication (which is not discussed), but on the fact that many authors in presumably modern literature have not used the name for various reasons. However, many papers are not concerned with taxonomy or nomenclature and as such have no bearing on how taxonomy should be expressed in genus or subgenus attributions. From Welter-Schultes & Audibert’s comment, too, it is apparent that the taxonomy of the species involved is far from settled, but taxonomy is outside the scope of the application. Clarity is needed as to whether the name *Cornu* Born, 1778 is available, whatever the opinions about its taxonomic status are or will be in the future.

Additional references

Schileyko, A.A. 2006. Treatise on Recent terrestrial pulmonate molluscs. Part 13: Helicidae, Pleurodontidae, Polygyridae, Ammonitellidae, Oreohelicidae, Thysanophoridae. *Ruthenica*, Supplement, 2(13): 1765–1906.

Comment on *Erythemis* Hagen, 1861: proposed precedence over *Leptthemis* Hagen, 1861 (Insecta, Odonata)

(Case 3584; see BZN 69: 92–100)

Bill Mauffray

International Odonata Research Institute, PO Box 147100, Gainesville FL 32614–7100, U.S.A. (e-mail: idonata@bellsouth.net)

As curator of the ½ million-specimen Odonata collection within the FSCA – Florida State Collection of Arthropods, I fully support retaining *Erythemis* over *Leptthemis* for the reasons cited in Case 3584. For the most part, *Leptthemis* was eliminated from usage in the Americas in the middle of the 20th century.

Comments on the proposed conservation of usage of the specific name of *Scarabaeus fimetarius* Linnaeus, 1758 (currently *Aphodius fimetarius*; Insecta, Coleoptera, SCARABAEIDAE) by designation of a neotype

(Case 3579; see BZN 69: 29–36, 128–140)

(1) Marco Dellacasa

Museo di Storia Naturale e del Territorio, Università di Pisa, Via Roma 79, 56011 Calci (Pisa), Italy (e-mail: dellacasa@museo.unipi.it)

Giovanni Dellacasa

Via Talamone 31/19, 16127 Genova, Italy (e-mail: dellacasag@alice.it)

Since it is now sufficiently clear that the ‘old’ *Aphodius fimetarius* consists of two different species, it is necessary to adopt names for the two entities involved. We fully support the suggestions by Fery (BZN 69: 128–136), which seems to be the best

solution for nomenclatural stability. In the following, we include the results of our bibliographical investigations:

- Linnaeus (1758, p. 348, n° 22) (*Systema Naturae*, Ed. X) described *Scarabaeus fimetarius* with ‘elytris[que] rubris’ citing his *Fn. Suec.* [*Fauna Suecica* 1746: 134, n°] 355 and *Scarabaeus fimetarius* var. β with ‘elytris griseis, pedibus pallidis’ citing his *Fn. Suec.* [*Fauna Suecica* 1746: 133, n°] 353. The Swedish author indicated as type locality for both ‘Europae’. The citation of *Fauna Suecica* could allow one to consider ‘Suecia’ as patria typica, conventionally restricted.
- De Geer (1774, p. 266) described *Scarabaeus pedellus* with ‘elytris [. . .] rubris’ citing in the bibliographical references *Scarabaeus fimetarius* Linnaeus, ‘Faun. Ed. 2, n° 385’ and ‘Syst. Ed. 12, p. 548, n° 32’. On page 267 he dealt with *Scarabaeus fimetarius* with ‘elytris griseis’ citing in the bibliographical references *Scarabaeus fimetarius* var. Linnaeus ‘Faun. Ed. I., n° 353’ and ‘Syst. Ed. 12, p. 548, n° 32.’.

It is evident, also referring to the French descriptions, that *Scarabaeus pedellus* De Geer = *Scarabaeus fimetarius* Linnaeus, and *Scarabaeus fimetarius* Linnaeus sensu De Geer = *Scarabaeus fimetarius* var. β Linnaeus. Most authors considered *Scarabaeus fimetarius* var. β Linnaeus as a doubtful synonym of *Scarabaeus foetidus* Herbst, 1783. Conversely from De Geer’s Latin (‘elytris griseis: maculis linearibus nigris’) [elytra grey, marked with black linear spots] and French (‘les étuis [. . .] sont d’un gris obscur ou d’un jaune-brun griseâtre, avec six ou sept petites taches allongées noires sur chacun’) [the elytra [. . .] are dark grey or greyish yellow-brown, with six or seven small elongate black spots on each] descriptions as well as from the figures (pl. 10, fig. 10–11) one can suppose that *Scarabaeus fimetarius* Linnaeus sensu De Geer could be considered a *Scarabaeus conspurcatus* Linnaeus, 1758.

In conclusion, as stated by Fery (BZN 69: 128–136), we think that the names *Scarabaeus fimetarius* Linnaeus, 1758 (currently *Aphodius fimetarius*) and *Aphodius cardinalis* Reitter, 1892 have to be considered the valid names for the two species forming the ‘old’ *fimetarius* complex. Obviously the lectotype selected by Wilson (2001) for *Scarabaeus fimetarius* Linnaeus, being *Scarabaeus foetens* Fabricius, 1787, has to be set aside. Moreover, Landin (1956, p. 8) reported that in the Linnaeus collection preserved by the Linnean Society were present only four unlabelled specimens of *Scarabaeus fimetarius* and not six as reported by Wilson (2001), none of them belonging to the var. β .

Additional references

- Linnaeus, C. 1761. *Fauna Svecica sistens Animalia Sveciae Regni: Mammalia, Aves, Amphibia, Pisces, Insecta, Vermes. Distributa per classes & ordines, genera & species*. Ed. 2. [48], 578 pp. Salvii Stockholmiae.
- Linnaeus, C. 1767. *Systema Naturae*, Ed. 12, vol 1, part 2. Pp. 533–1327. Salvii Holmiae.
- Reitter, E. 1892. Bestimmungs-Tabelle der Lucaniden und coprophagen Lamellicornen des Palearctischen Faunengebietes. *Verhandlungen des Naturforschenden Vereins in Brünn*, 30: 140–262.

(2) Mattias Forshage

Swedish Museum of Natural History, Box 50007, SE-104 05 Stockholm, Sweden
(e-mail: Mattias.Forshage@nrm.se)

This is a statement in support of the proposals of Angus, Wilson & Krell in Case 3579 (BZN 69: 29–36). The comments on this case in BZN 69: 128–140 show the controversy about it. In the comments by Fery and by Bellman, Hillert & Rößner arguments are launched against the case, from Fery even a counter-application.

All agree that (A) we have two species in what was formerly known as *Aphodius fimetarius* (Linnaeus, 1758) and (B) that *A. foetens* (Fabricius, 1787) is unproblematic so that the lectotypification which accidentally involves this species must be ruled invalid in order not to threaten nomenclatural stability. There is controversy as to A) which of the two species should be called *fimetarius*, and B) whether they are unambiguously diagnosable by external characters so that a lectotype can be confidently designated among the Linnaean specimens, or a neotype is preferable.

Linnaeus clearly appears to have considered both species as part of his *fimetarius*, as have a very large number of authors since. It is not correct to assume that the usage of the name *fimetarius* was unambiguous between 1758 and 2001. The name was used for both species during this time.

The discussion of stability might possibly benefit from a discussion in terms of the philosophical distinction between extension and intension (i.e. instances referred to, and underlying concept utilised, respectively). If an author writes a regional (i.e. national) fauna, what is being referred to in terms of extension with a name, is merely the local populations associated with this name in the particular work. If this is crucial, then it might possibly be meaningful (but time-consuming) to check the literature of the period 1758–2001 simply to see which ‘species’ distribution area the populations discussed reside in. The result might perhaps be that a larger number of references have been to northern populations, but I am not sure that this makes sense. Since most authors were not making a distinction between a northern, more deeply red, and a southern, more yellowish *fimetarius*, we must recognise that in terms of intension, they were in fact referring to both; their concept of the species *fimetarius* included both species, regardless of whether they might have referred to only one of them specifically within the context of their discussion.

However, we are not dealing with ‘prevailing usage’ in the sense of the Code here, because that refers to a consensus or near-consensus with formal requirements. Nevertheless, the discussion of ‘stability’ should also preferably rest on more solid foundations than regional standards and competition for percentages.

The argument that most authors consider *fimetarius* a species with red elytra (and that this separates it from the more southern European taxon that has yellowish-red elytra) rests on a strong distinction between red and yellowish-red which is hardly present in our natural languages and probably not in the morphological terminology of most entomologists (yellowish-red is, I assume, for most a variety of red rather than something different from red).

In the original description, Linnaeus uses the word ‘rubris’ – but looking at his own use of *ruber* and derivations thereof in *Systema Naturae* (Linnaeus, 1758), it can refer to a whole range of red nuances, including deep red but often yellowish-red (and he does refer to the yellowish-red antennal clubs of *fimetarius* as the same colour as the elytra (‘antennis elytrisque rubris’ p. 348)) or pink-red. As a central clarifying example of usage by 18th century entomologists, when Illiger (1800) wanted to homogenise the biological vocabulary, he was indeed using ‘ruber’ in the heading of

the section describing all the different red nuances rather than for a particular red nuance (Illiger, 1800, p. 85).

Furthermore, even if morphological characters to distinguish the two taxa involved are being clarified now, and do include elytral colour, this is absolutely insufficient for regarding them as unmistakable (Fery himself states it needs to be studied in conjunction with several other characters). Even less satisfactory is to project such unmistakableness retroactively, and regard a brief description of elytral colour as an unambiguous indication of identity.

All seem to agree that there are two species. De Geer's name *pedellus* has extant type material and belongs to the northern one and has now been used for it by several authors (not all) for a decade, including in the available diagnostic key of Whitehead (2006). The name *finetarius* has been used for both for a very long time; with the heterogeneous type series it cannot be unproblematically attached to either. In cases like this, we typically go with the actions of the First Reviser – in this particular case Wilson (2001). Her concepts of *finetarius* and *pedellus* were clear enough even though she did not yet know the range of diagnostic morphological characters, and then there was an unfortunate mistake made in the lectotypification aimed to solidify these concepts.

Thus, I support the original application of Angus et al. (Case 3579). The problems it addresses badly need a solution, and the arguments against it are not decisive. The fact that some authors at this stage feel confident to identify with certainty the two species based on external morphological characters does not change the fact that the authors of Case 3579 did not do so (and very many authors don't, at least not yet), and therefore the conditions for applying Article 75.5 are not removed. The Commission can not rule on the taxonomic question of how easy it is to distinguish these two species, but only on the nomenclatural question of whether Case 3579 presents a satisfactory solution to the current problematical situation.

Should, in this case, the Commission see good reasons to rule against Case 3579, I provisionally support the proposal of Fery, which will have the desired consequences too. It does have two disadvantages compared to the solution of Angus et al. (Case 3579) though: it rests on the feasibility of making solid identifications based on a photograph (the new lectotypification of a Linnean specimen as *finetarius*) which is not safely documented, and it involves a larger number of nomenclatural acts requiring the plenary power of the Commission (neotypification of *cardinalis* and the suppression of its possible senior synonyms). In terms of stability, I consider both proposals equivalent because, until this is settled, all references to *finetarius* carry some ambiguity. The important thing is to set aside the erroneous lectotypification of *finetarius*, and allow unambiguous naming of the two species previously considered *finetarius*, at least from now on.

Additional references

Illiger, J.K.W. 1800. *Versuch einer systematischen vollständigen Terminologie für das Thierreich und Pflanzenreich*. 469 pp. Fleckeisen, Helmstädt.

(3) Andrey Frolov

Department of Coleopterology, Laboratory of Insect Systematics Zoological Institute RAS Universitetskaya nab., 1, St. Petersburg, 199034, Russia
(e-mail: aphodius@rambler.ru)

Aphodius is one of the largest and evolutionarily most successful genera and it dominates dung beetle communities in temperate regions. Its type species, *A. fimetarius* (L.), is one of the most widespread eurybiont species of the genus which was successfully introduced to North America and Australia, therefore the erroneous designation of its lectotype would cause considerable problems unless ICZN rules to set the present lectotype aside. I strongly support Angus et al. (Case 3579), who proposed an entirely legitimate course which would result in the minimum of alterations to nomenclature.

All the workers who already replied to the proposal by Angus et al. agreed that a neotype should be designated. Debate concerns which of the two sibling species should bear the name *Aphodius fimetarius*. Essentially the existence of the two sibling species of the *fimetarius* complex was discovered by studying their karyotypes and most soundly supported by the differences in the shape of the chromosomes. Therefore I think that the designation of the neotype as in Case 3579 is methodologically more consistent because the specimen's karyotype is studied and described as a part of the neotype designation.

The counter proposal put forward by Fery (BZN 69: 128–136) and broadly supported by Bellmann et al. (BZN 69: 136–138) has no advantages over the proposal of Angus et al. in terms of the stability of nomenclature. Fery wrote that the neotype proposed by Angus et al. does not conform to the original description and prevailing usage of *A. fimetarius*. In my opinion Linnaeus' description agrees well with a few currently recognized species including *A. fimetarius* (sensu Angus et al.). Besides, most workers of the past century recognized only one red European *Aphodius* with a black abdomen and saw nothing special about specimens with paler or more yellowish elytra. Perception of colour is different among humans and coloration of elytra varies considerably within *Aphodius* species. The adequate way to assess coloration is to study it spectrophotometrically, which has not yet been done. The shape of the parameres and other morphological characters which are deemed to distinguish the two sibling species are rather feeble, difficult to interpret unequivocally, and overlapping. Further, more comprehensive research is needed to find out how the two sibling taxa recognized karyotypically by Angus et al. and genetically (see Roslin, BZN 69: 138) conform to the two morphotypes recognized by Fery and by Rößner (in press). The first, immediate step however is to adopt the proposal of Angus et al. (Case 3579).

I am thankful to Robert Angus (*Royal Holloway U.K.*) for interesting discussion and to Eckehard Rößner (*Schwerin Germany*) for sharing his unpublished data.

(4) Jason Maté

c/Henares 16, Velilla de san Antonio, 28891, Madrid, Spain
(e-mail: jfmate@gmail.com)

With regard to Case 3579 it is a delicate situation that requires setting aside original Linnean material, but the special circumstances of the case warrant such an

approach. Several other authors have written in support of Angus et al.'s (BZN 69: 29–36) suggestion to designate a neotype for *Aphodius fimetarius* (L.) and have covered all aspects of this suggestion in such detail that there is nothing I can add that has not been said. However the counter argument by Fery (BZN 69(2): 128–136) and Fery's own proposal, I feel overlook several problems which greatly weaken his position in comparison to Angus et al.'s; namely, the supposed distinctions authors have made on the coloration, the distribution of the two species and the definition of *cardinalis* Reitter are not as solid as suggested by Fery.

1. On coloration

Fery's proposal hinges mostly on coloration as a key diagnostic character in the definition of *Aphodius fimetarius*. With regard to its usefulness, the distinction is at best a matter of degree and only truly workable in live material or well preserved specimens, and even in these cases it is not diagnostic. In older material, especially if greasy or dirty, colours are often indistinguishable, even after thorough cleaning. In addition coloration in both species is not uniform but there is broad overlap, and this is likely the reason why the two species were not considered distinct. A sampling of important systematic papers on APHODIINI prior to Wilson (2001) failed to produce any that suggested that *fimetarius* was specifically 'dark red', as suggested by Fery. Rather it was described simply as red or as a tonal range, but with no stress on this either, for example in Schmidt (1922, p. 271) and Balthasar (1964, p. 364).

Dellacasa (1983) describes the forma typica of *fimetarius* as 'rosso-chiaro' and although he indicates that *subluteus* is 'rosso-giallo' it becomes obvious that the colour differences are subtle at best. The last major paper (Kral, 1997) dealing with the systematics of the subgenus *Aphodius* prior to Wilson (2001) indicates the colour as 'red or dark red', hence it is obvious that he thought the range was simply intraspecific variation.

These are significant publications published prior to Wilson (2001), which deal with the subgenus *Aphodius*, (to which *fimetarius* belongs) and which are expected to have been the result of the examination of many specimens. None makes the distinction that *fimetarius* is 'dark red' and this makes it obvious that, prior to Wilson (2001), *fimetarius* was simply red to most authors.

2. On distribution

Fery stresses that the lighter form is a southern form and therefore hints that this is diagnostic in some way as well or that it supports his neotype designation. But the truth is that this assertion hinges solely on the absence of the lighter form from Sweden. In Central, Western and Southern Europe both species coexist. In fact having examined the material preserved at the Natural History Museum in Madrid, which covers the entirety of Spain as well as Portuguese localities, I have found that both species are found throughout the Iberian Peninsula, even down in Andalusia. This does not preclude that ecological differences exist or will be found in future but, for practical purposes, both species are to be considered mostly sympatric in Europe.

3. On *cardinalis* Reitter

The rejection of Angus et al.'s proposal requires that a better solution be suggested if nomenclatural stability is to be attained. However Fery's suggestion of using

cardinalis Reitter will result in less stability, not more. Aside from the numerous nomenclatural changes necessary, which Fery lists, there is the issue of how *cardinalis* was defined by Reitter. In his description the diagnostic character was not the elytral colour but the particular convexity of the interstriae near the apex (from Schmidt, 1922, p. 273). Because this character can belong to both species and both occur in the locality of Fery's proposed neotype, we cannot be certain if this neotype will match Reitter's *cardinalis*. Dellacasa (1983) indicated that he failed to find any material that could be ascribed to this species except maybe material from Algeria. Finally, as Bellman et al. (BZN 69: 29–36) indicate, 'All specimens can be identified safely if all characters are given enough attention (colour of elytra, shape of elytral interstices, reticulation of elytral apex, shape and punctuation of head and pronotum, and shape of male parameres in lateral view).' From this it follows that using colour alone to designate the neotype of *cardinalis* is fraught with risk.

Taking these doubts into account it is not possible to accept Fery's suggestion as superior in any way to Angus et al.'s. The need to consider karyological data to be completely certain of the identity of the material requires that the neotype be identified with all the data that can be mustered. I therefore wish to add my support to Angus et al.'s proposal.

Additional references

- Dellacasa, G. 1983. *Sistematica e nomenclatura degli aphodiini italiani (Coleoptera: Scarabaeidae: Aphodiinae)*. 464 pp. Museo Regionale di Scienze Naturali, Torino.
- Král, D. 1997. A review of Chinese *Aphodius* species (Coleoptera: Scarabaeidae). Part 5: subgenus *Aphodius*. *Acta Societatis Zoologicae Bohemicae*, 61: 199–217.
- Schmidt, A. 1922. *Das Tierreich: Coleoptera Aphodiinae*, vol. 45. 614 pp. Walter de Gruyter & Co., Berlin & Leipzig.

(5) Alberto Ballerio

Viale Venezia 45, 25123 Brescia, Italy (e-mail: alberto.ballerio.bs@numerica.it)

I support the application by Angus et al. (BZN 69: 29–36). Provided that the discovery of a cryptic species within *Aphodius fimetarius* s.l. by C.J. Wilson was made on the basis of chromosomal analysis, and that morphological differences between the two species are subtle and subject to some degree of variability and overlapping, the most prudent approach to the problem is the designation of a neotype with a karyotype, rather than using historical material, which could prove to be insufficient or misleading (in the event that further cryptic species are discovered in the future or that a better understanding of the morphological variation of the species concerned changes our definition of the taxa involved). I do not share Fery's concerns (BZN 69: 128–135) about stability of nomenclature. First of all it must be said that the distinction made by him and Angus et al. between a species with 'deep red' elytra and a species with 'yellowish-red' elytra is somewhat misleading. There is no such strong color variation in and between the two species, since the color varies from red (the prevailing color in the Northern species, *A. pedellus* sensu Wilson) to orange (the prevailing color in the Southern species, *A. fimetarius* sensu Wilson), and the distinction threshold between these two colors is extremely undefined and subjective (hence the 'red elytra' of the original description by Linnaeus is an irrelevant point).

Therefore, and based on my personal experience, the 'prevailing usage' of *Aphodius fimetarius*, i.e. the usage followed by the majority of coleopterists prior to Wilson's discovery and by all coleopterists who did not accept, or who ignored Wilson's discovery, includes both colors.

As indicated by Angus et al. the new arrangement created by Wilson (2001) is gaining more and more consensus and the neotype proposed by Angus et al. is the coherent completion of that arrangement. I do not see any reason to revolutionize that situation by following Fery's proposal.

(6) Tristão Branco

Rua de Camões 788, 2° Dto, 4000–142 Porto, Portugal

(e-mail: tristao.branco@gmail.com)

I support the Angus et al. (BZN 69: 29–36) proposal to set aside Wilson's (2001) designation of a lectotype for *Scarabaeus fimetarius* Linnaeus, 1758. But I oppose their proposal for the designation as neotype of a specimen that does not belong to Linnaeus' type material. For the reasons presented below, nomenclatural stability and universality will be best served by the designation of one of the now paralectotypes (see below) as the name-bearing type of *Scarabaeus fimetarius* Linnaeus, 1758.

1. The identity of *Aphodius foetens* (Fabricius, 1787)

The debate on whether *Scarabaeus fimetarius* Linnaeus, 1758 and *Scarabaeus foetens* Fabricius, 1787 are identical or distinct species was settled by Landin (1956) who studied Fabricius' type material and designated a lectotype. He discussed comprehensively early interpretations of the name *Scarabaeus foetens*, and concluded: 'Fabricius' original material verifies the accuracy of the older conception. The species is not identical with *fimetarius* L. but corresponds morphologically to Stephen's *aestivalis*. Consequently Fabricius's *foetens* ought to be re-entered as the valid name.' Landin's conclusion was upheld by subsequent authors.

2. Wilson's 2001 study

Wilson's (2001) thorough assessment of the specimens she had under study clearly reveals that she mistook *foetens* for *fimetarius*. The characteristics that she ascribes, in her key, to *fimetarius*, 'Males. . . . Head with lateral lobes of the clypeus generally less pronounced, their outer margins parallel basally (figs. 10, 11). Females. Coarse punctation of pronotum less well developed, often almost absent over most of the disc (fig. 14), or with distinct impunctate areas either side of mid line on disc (fig. 16)', are in fact features of *foetens*. And the characteristics that she ascribes to *pedellus*, 'Males. . . . Head with lateral lobes of clypeus generally more pronounced, their outer margins divergent basally (figs. 12, 13). Females. Coarse punctation of pronotum more strongly developed, with at most some thinning of the punctation over disc, and without distinct impunctate areas (figs. 17, 19)', are in fact features of *fimetarius* sensu auctorum.

As a consequence of her misidentification, Wilson had to look for a name for *fimetarius* sensu auctorum. She chose *Scarabaeus pedellus* DeGeer, 1774, the oldest available synonym of *fimetarius* sensu auctorum. Therefore, we can safely say that:

- *Aphodius fimetarius* sensu Wilson, 2001 = *Aphodius foetens* (Fabricius, 1787)
- *Aphodius pedellus* sensu Wilson, 2001 = *Aphodius fimetarius* sensu auctorum

Accordingly, figs. 1–3 in Wilson's 2001 paper show the karyotype of *Aphodius foetens* (Fabricius, 1787), and figs. 4–9 that of *Aphodius fimetarius* sensu auctorum. The obvious conclusion is that her work does not reveal that the *A. fimetarius* of authors comprises two species, it just confirms that *Aphodius fimetarius* sensu auctorum and *Aphodius foetens* (Fabricius, 1787) are indeed two distinct species.

3. The type material of *Scarabaeus fimetarius* Linnaeus, 1758

Wilson's (2001) detailed survey of the six specimens held by the Linnean Society in Burlington House helps to understand what really happened. She dismissed one of the specimens, a female, as not a Linnean specimen. According to her, the remaining five specimens include both species she had under study. Amongst these five syntypes, she deliberately chose for lectotype a female that 'has the pronotal punctation very reduced', i.e., a female of *fimetarius* sensu Wilson, in fact a female of *Aphodius foetens* (Fabricius, 1787), as acknowledged by the applicants.

According to Wilson (2001) 'The male on the same type of pin as the females has the clypeal lobes strong, intermediate between the males shown in figs. 12 and 13. It is *A. pedellus*'. The applicants confirm, in their point 6, that this male is indeed a *pedellus* sensu Wilson, i.e. a *fimetarius* sensu auctorum. I suggest that it should be designated as the name-bearing type of *Scarabaeus fimetarius* Linnaeus, 1758. Obviously, I am assuming that the Commission will set aside the previous lectotype designation.

In that way, the identity of *Aphodius fimetarius* (Linnaeus, 1758) would be firmly established. Those who do believe that the '*A. fimetarius* of authors' actually comprises two distinct species, which is a taxonomic judgement, will be free to pursue their inquiries, and to determine, on the basis of the relevant name-bearing types, which is the valid name for that other species.

Acknowledgements

I am grateful to Eckehard Rößner (*Schwerin, Germany*) for his pertinent remarks on an earlier version of this Comment.

Comment on *Anchisaurus* Marsh, 1885 (Dinosauria, Sauropodomorpha): proposed conservation of usage by designation of a neotype for its type species *Megadactylus polyzelus* Hitchcock, 1865

(Case 3561; see BZN 69: 44–50, 141–142)

Peter M. Galton

College of Naturopathic Medicine, University of Bridgeport, Bridgeport, CT, U.S.A.;
Peabody Museum of Natural History, Yale University, New Haven, CT, U.S.A.
 (e-mail: pgalton@bridgeport.edu)

As regards the objections raised by Demirjian (BZN 69: 141–142) to the proposal to replace the fragmentary and non-diagnostic holotype of *Megadactylus polyzelus*

Hitchcock, 1865, the type species of *Anchisaurus* Marsh, 1885, with a diagnostic neotype, an almost complete skull and skeleton (YPM 1883, holotype of *Anchisaurus colurus* Marsh, 1891), it should be noted that:

1. The holotype (AM 41/109) of *Megadactylus polyzelus* Hitchcock, 1865 came from Springfield, Massachusetts whereas the proposed neotype (YPM 1883) was found in Manchester, Connecticut. It is suggested that the proposal in Case 3561 should be rejected because of the locality part of Article 75.3.6, viz., evidence that the neotype came as nearly as practicable from the original type locality and from the same geological formation. Within the Hartford Basin, the Longmeadow sandstone in Massachusetts is regarded as a local member of the Portland Formation of Connecticut (Cornet & Traverse, 1975). AM 41/109 was a unique discovery shortly prior to 1856, the result of blasting operations during construction of the 'watershop' building (see Santucci, 1998, fig. 1) at the Springfield Armory, which is now part of the U.S. National Park Service. YPM 1883 was discovered in 1884 at the Wolcott Quarry (since built over) in Manchester, the only other locality from which material of *Anchisaurus* has been discovered in the over 150 years since the original discovery of AM 41/109. The two localities are about 32 km apart (Lull, 1915, map 2), which is as close as is practicable under the circumstances.

2. Two supposed autapomorphies for the holotype of *Anchisaurus polyzelus* (a slender first sacral rib with its base occupying less than half of first sacral centrum length and dorsoventrally flattened ischial blades set at a low angle to each other), originally proposed by Yates (2010), and accepted by Demirjian, are no longer valid because both occur in *Leoneriasaurus taquetrensis* Pol et al., 2011 (Lower Jurassic, Argentina). In addition, the sacral character also occurs in *Adeopapposaurus mognai* Martinez, 2009 (Lower Jurassic, Argentina) and in *Efraasia diagnostica* (Huene, 1932) (Upper Triassic, Germany; only holotype with caudosacral, Galton, 2001, figs. 2a, b, A-C; not incorrectly referred specimens with dorsosacral, Yates, 2003, fig. 4 as *E. minor*; see also Galton, 2001, figs. 1B-D). The ischial character is indeterminate for YPM 1883 and also occurs in *Asylosaurus yalensis* Galton, 2007 (Upper Triassic, England). Consequently, *Megadactylus polyzelus* Hitchcock, 1865 is a nomen nudum.

3. The taxonomic status of other basal sauropodomorphs from the Lower Jurassic of North America, viz., YPM 2125 from East Windsor, Connecticut (Galton, 1976; Yates, 2004, 2010), specimens from Arizona incorrectly referred by Galton (1971, 1976) to *Ammosaurus* cf. *major* (Yates, 2004; Irmis, 2005), and specimens from Nova Scotia, Canada incorrectly referred by Shubin et al. (1994) to cf. *Ammosaurus* sp. (Fedak, 2006a, b), is irrelevant to Case 3561.

Additional References

- Cornet, B. & Traverse, A. 1975. Palynological contributions to the chronology and stratigraphy of the Hartford Basin in Connecticut and Massachusetts. *Geoscience and Man*, **11**: 1–33.
- Fedak, T.J. 2006a. A rich bone bed of sauropodomorph dinosaurs in the Early Jurassic (Hettangian) McCoy Brook Formation. *Journal of Vertebrate Paleontology*, **26** (Supplement to 3): 60A.
- Fedak, T.J. 2006b. *Description and evolutionary significance of the sauropodomorph dinosaurs from the Early Jurassic (Hettangian) McCoy Brook Formation*. 251 p. Unpublished PhD thesis, Dalhousie University, Halifax, Nova Scotia, Canada.

- Galton, P.M.** 2001. Prosauropod dinosaur *Sellosaurus gracilis* (Upper Triassic, Germany): third sacral vertebra as either a dorsosacral or a caudosacral. *Neues Jahrbuch für Geologie und Paläontologie, Monatshefte*, **2001**: 688–704.
- Martinez, R.N.** 2009. *Adeopapposaurus mognai*, gen. et sp. nov. (Dinosauria: Sauropodomorpha), with comments on adaptations of basal Sauropodomorpha. *Journal of Vertebrate Paleontology*, **29**: 142–164.
- Santucci, V.L.** 1998. Early discoveries of dinosaurs from North America and the significance of the Springfield Armory dinosaur site. *National Park Service Technical Report, NPS/NRGRD/GRDTR-98/1*: 152–154.
- Yates, A.M.** 2003. The species taxonomy of the sauropodomorph dinosaurs from the Löwenstein Formation (Norian, Late Triassic) of Germany. *Palaeontology*, **46**: 317–337.

OPINION 2303 (Case 3520)***Boccardia proboscidea* Hartman, 1940 (Annelida, SPIONIDAE): specific name conserved**

Abstract. The Commission has conserved the specific name *Boccardia proboscidea* Hartman, 1940 for a widely dispersed mudworm (family SPIONIDAE) from California by giving the name precedence over its rarely used senior subjective synonym *Polydora californica* Treadwell, 1914. The untypified name *Spio californica* Fewkes, 1889 has also been suppressed.

Keywords. Nomenclature; taxonomy; Annelida; SPIONIDAE; *Boccardia proboscidea*; *Polydora californica*; *Spio californica*; mudworm; California.

Ruling

- (1) Under the plenary power, the Commission has:
 - (a) ruled that the name *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea*, is to be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
 - (b) suppressed the name *californica* Fewkes, 1889, as published in the binomen *Spio californica*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by syntypes USNM 20217 and LACM-AHF POLY 1226, with the endorsement that it is to be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
 - (b) *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, with the endorsement that it is not to be given priority over *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by syntypes USNM 20217 and LACM-AHF POLY 1226, whenever the two are considered to be synonyms.
- (3) The name *californica* Fewkes, 1889, as published in the binomen *Spio californica* and as suppressed in (1)(b) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3520

An application to conserve the specific name *Boccardia proboscidea* Hartman, 1940 for a widely dispersed mudworm (family SPIONIDAE) from California by giving the name precedence over its rarely used senior subjective synonym *Polydora californica* Treadwell, 1914, and setting aside most previous type fixations for *Boccardia*

proboscidea Hartman, 1940 was received from Vasily I. Radashevsky (*A. V. Zhirmunsky Institute of Marine Biology, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia*) and Leslie H. Harris (*Natural History Museum of Los Angeles County, Los Angeles, CA, U.S.A.*) on 13 March 2010. After correspondence the case was published in BZN 67: 203–210 (2010). The title, abstract and keywords of the case were published on the Commission's website. One comment by the authors with an alternative set of proposals which removed the request 'to set aside all previous type fixations for *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea*, and to designate a neotype' was published in BZN 68: 134–136.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN 67: 207. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 18: Ballerio, Bogutskaya, Brothers, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Kojima, Lim and Štys.

Alonso-Zarazaga split his decision, voting FOR: (1)(b), (3); AGAINST: (1)(a), (2). Grygier also split his decision, voting FOR 1b, 3; AGAINST 1a, 2a, 2b.

Bouchet abstained. Fautin, Ng and Pyle were on leave of absence.

Voting AGAINST, Štys said he could not see any compelling reason why the Commission should select as syntypes just two specimens from the series (= 'holotype-lot') as he felt that the status of the remaining syntypes would be unclear. He suggested that a lectotype be selected, and thus the remaining specimens from the type series would become paralectotypes automatically. In Štys' view Hartman's general idiosyncratic concept of 'types' did not have any bearing on the case. Moreover, by not suppressing *Spio californica* Dewkes, 1889 fully, i.e. also for the purposes of the Principles of Homonymy, he suggested that there would still be a danger of appearance of this name as a senior secondary homonym should the species be eventually recognized as a member of *Boccardia*.

Voting AGAINST, Kojima said that the name *Boccardia proboscidea*, could be stabilized by designating a lectotype from the syntypes. He felt it was not clearly mentioned to what extent the synonymy of *Polydora californica* Treadwell, 1914 and *Boccardia proboscidea* Hartman, 1940 had been accepted in the taxonomic community, thus he did not see the current necessity to give *Boccardia proboscidea* Hartman, 1940 precedence over *Polydora californica* Treadwell, 1914.

Alonso-Zarazaga, who SPLIT his vote, said he considered it advisable to get rid of the name *Spio californica*, which is unrecognizable. However, he thought that the Principle of Priority must be strictly applied in the case of the two species described in the 20th century. He felt that the nomenclatural instability in this case would be minimal. Grygier, who also SPLIT his vote, said he would have voted in favor of the proposals related to conditional reversal of precedence if the holotype of Treadwell's *californica* were lost or unusable, and the taxonomic identity of his nominal species were thus unclear, but such was not the case.

Bouchet ABSTAINED, and commented that the polychaete *Boccardia proboscidea* is the subject of a significant body of literature in aquaculture, genetics and marine biology in general. It was thus conceivable that the name should technically be protected against an unused senior synonym. However, he felt that the technical solution proposed by the applicants (conditional reversal of precedence) was a source of instability; he would have preferred that the name *Polydora californica* be placed on the Official Index. Furthermore, in a family where cryptic species abound, this vote was a missed opportunity to unambiguously link the name to a sequenced neotype.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

californica, *Polydora*, Treadwell, 1914, *University of California Publications in Zoology*, **13**(8): 203.

californica, *Spio*, Fewkes, 1889, *Bulletin of the Essex Institute, Boston*, **221**: 37.

proboscidea, *Boccardia*, Hartman, 1940, *Journal of the Washington Academy of Sciences*, **30**(9): 383.

OPINION 2304 (Case 3533)***Neobisium* Chamberlin, 1930 (Arachnida, Pseudoscorpiones):
precedence given over *Blothrus* Schiödte, 1847**

Abstract. The Commission has conserved the widely used pseudoscorpion generic name *Neobisium* Chamberlin, 1930 by giving it precedence over the genus-group name *Blothrus* Schiödte, 1847, which has been used as a subgenus or synonym of *Neobisium*.

Keywords. Nomenclature; taxonomy; Arachnida; Pseudoscorpiones; NEOBISIIDAE; *Neobisium*; *Blothrus*; pseudoscorpions; Palaearctic.

Ruling

- (1) Under the plenary power, the Commission has given the name *Neobisium* Chamberlin, 1930 precedence over the name *Blothrus* Schiödte, 1847 whenever the two are considered to be congeneric.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Neobisium* Chamberlin, 1930 (gender: neuter), type species *Obisium muscorum* Leach, 1817 (a junior subjective synonym of *Chelifer carcinoides* Hermann, 1804) by original designation, with the endorsement that it be given precedence over *Blothrus* Schiödte, 1847, whenever the two are considered to be congeneric;
 - (b) *Blothrus* Schiödte, 1847 (gender: masculine), type species *Blothrus spelaeus* Schiödte, 1847 by monotypy, with the endorsement that it is not to be given priority over *Neobisium* Chamberlin, 1930, whenever the two are considered to be congeneric.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *spelaeus* Schiödte, 1847, as published in the binomen *Blothrus spelaeus* (specific name of the type species of *Blothrus* Schiödte, 1847);
 - (b) *carcinoides* Hermann, 1804, as published in the binomen *Chelifer carcinoides*, the valid specific name of the type species of *Neobisium* Chamberlin, 1930 (a senior subjective synonym of *Obisium muscorum* Leach, 1817).

History of Case 3533

An application to conserve the widely used pseudoscorpion generic name *Neobisium* Chamberlin, 1930 by giving it precedence over the genus-group name *Blothrus* Schiödte, 1847, which is currently used as a subgenus or synonym of *Neobisium*, was received from Mark S. Harvey (*Western Australian Museum, Welshpool DC, Western Australia, Australia*) and Volker Mahnert (*Muséum d'histoire naturelle, Genève, Switzerland*) on 31 August 2010. After correspondence the case was published in BZN 68: 47–53 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 49–50. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Brothers, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Minelli, Pape, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 4: Bogutskaya, Lamas, Lim and van Tol.

Bouchet abstained. Fautin, Ng and Pyle were on leave of absence.

Bouchet ABSTAINED, and commented that the name *Neobisium* was the subject of a rather considerable body of literature, and it was thus conceivable that it should technically be protected against an unused senior synonym. However, he felt that in the present case the senior synonym (*Blothrus*) was not unused and the technical solution proposed by the applicants (conditional reversal of precedence) is a source of instability. Bouchet said he would have preferred that the name *Blothrus* be placed on the Official Index.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Blothrus Schiödte, 1847, *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlingar*, 6: 80.

carcinoides, Chelifer, Hermann, 1804, *Mémoire aptérologique*. G. Levrault, Strasbourg, p. 118.

Neobisium Chamberlin, 1930, *Annals and Magazine of Natural History*, (10)5: 11.

spelaesus, *Blothrus*, Schiödte, 1847, *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlingar*, 6: 80.

OPINION 2305 (Case 3537)**ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 (Insecta, Coleoptera, STAPHYLINIDAE, ALEOCHARINAE): family-group names conserved**

Abstract. The Commission has conserved the family-group names ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 for a group of rove beetles by suppressing a little-used senior synonym CALLICERINI Jakobson, 1908.

Keywords. Nomenclature; taxonomy; Coleoptera; STAPHYLINIDAE; ALEOCHARINAE; CALLICERINI; CALLICERINA; ATHETINI; ATHETINA; GEOSTIBINA; *Callicerus*; *Atheta*; *Geostiba*; *Callicerus obscurus*; *Atheta graminicola*; *Geostiba circellaris*; Diptera; SYRPHIDAE; *Callicera*; *Callicera aenea*; rove beetles; Palaeartic.

Ruling

- (1) Under the plenary power, the Commission has suppressed the names CALLICERINI Jakobson, 1908, CALLICERINI Horion, 1967 and CALLICERINI Lohse, 1969 for the purposes of both the Principle of Priority and the Principle of Homonymy.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Callicera* Panzer, 1809 (gender: feminine), type species by monotypy *Bibio aenea* Fabricius, 1777;
 - (b) *Callicerus* Gravenhorst, 1802 (gender: masculine), type species by monotypy *Callicerus obscurus* Gravenhorst, 1802.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *aenea* Fabricius, 1777, as published in the binomen *Bibio aenea* (specific name of the type species of *Callicera* Panzer, 1809);
 - (b) *obscurus* Gravenhorst, 1802, as published in the binomen *Callicerus obscurus* (specific name of the type species of *Callicerus* Gravenhorst, 1802).
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) CALLICERINI Rondani, 1845, type genus *Callicera* Panzer, 1809 (Insecta, Diptera);
 - (b) ATHETINI Casey, 1910, type genus *Atheta* Thomson, 1858 (Insecta, Coleoptera);
 - (c) GEOSTIBINA Seevers, 1978, type genus *Geostiba* Thomson, 1858 (Insecta, Coleoptera).
- (5) The following names are hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology:
 - (a) CALLICERINI Jakobson, 1908 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) above;

- (b) CALLICERINI Horion, 1967 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) above;
- (c) CALLICERINI Lohse, 1969 (junior homonym of CALLICERINI Rondani, 1845), as suppressed in (1) above.

History of Case 3537

An application to conserve the family-group names ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 for a group of rove beetles which were threatened by a little used senior synonym CALLICERINI Jakobson, 1908, was received from Vladimir I. Gusarov (*National Center for Insect Biodiversity and National Center for Biosystematics, Natural History Museum, University of Oslo, Oslo, Norway*) on 24 September 2010. After correspondence the case was published in BZN **68**: 54–60 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN **68**: 57–58. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 21: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Minelli, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 2: Kullander and Lim.

Kottelat abstained. Fautin, Ng and Pyle were on leave of absence.

Although he voted FOR, Štys said he could not avoid criticising the original proposals. The Case stated in paragraph 5 that *Callicerina* Jakobson, 1908 was used by Jakobson (1909) as the valid name for the tribe MYRMEDONINI Thomson, 1867. If the synonymy still held, the latter name could potentially play some role in solving the problems outlined, but we were not told any further information. Štys objected to an implication that the Commissioners should be required to look for information in the original literature. Kottelat ABSTAINED because he had no access to the text of the application.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

- aenea*, *Bibio*, Fabricius, 1777, *Genera insectorum: eorumque characteres naturales secundam numerum, figuram, situm et proportionem, omnium partium oris adiecta mantissa specierum nuper detectarum*. (xvi), Litteris Mich. Friedr. Bartschii, Chilonii [= Kiel], p. 305.
- ATHETINI Casey, 1910, *Memoirs on the Coleoptera I*. Pp.1–183. The New Era Printing Company, Lancaster, p. 2.
- Callicera* Panzer, 1809, *Faunae insectorum Germanicae initiae oder Deutschlands Insecten. Heft 104*, Felssecker, Nurnberg, p. 17.
- CALLICERINI Horion, 1967, *Faunistik der Mitteleuropäischen Käfer. Band XI: Staphylinidae. 3. Teil: Habrocerinae bis Aleocharinae (ohne Subtribus Athetae)*. xxiv, Überlingen–Bodensee, pp. iii, 220.
- CALLICERINI Jakobson, 1908, *Zhuki Rossii i Zapadnoy Yevropy. Rukovodstvo k opredeleniyu zhukov. Vypusk 6*, A.F. Devrien, Sankt-Peterburg, p. 448.

CALLICERINI Lohse, 1969, *Bericht über die 10. Wanderversammlung deutscher Entomologen, 15. bis 19. September 1965 in Dresden*. Deutsche Akademie der Landwirtschaftswissenschaften zu Berlin, Berlin, pp. 173, 174, 175.

CALLICERINI Rondani, 1845, *Nuovi Annali delle Scienze Naturali, Bologna*, (2)2 [1844]: 451.

Callicerus Gravenhorst, 1802, *Coleoptera Microptera Brunsvicensia nec non Exoticorum quotquot exstant in collectionibus Entomologorum Brunsvicensium*. lxvi, C. Reichard, Brunswick, p. 65.

GEOSTIBINA Seevers, 1978, *Fieldiana: Zoology*, 71: 126.

obscurus, *Callicerus*, Gravenhorst, 1802, *Coleoptera Microptera Brunsvicensia nec non Exoticorum quotquot exstant in collectionibus Entomologorum Brunsvicensium*. lxvi, C. Reichard, Brunswick, p. 66.

OPINION 2306 (Case 3542)***Trachelus* Jurine, 1807 (Hymenoptera, CEPHIDAE): precedence given over *Astatus* Panzer, [1801]**

Abstract. The Commission has conserved the current usage of the widely used sawfly genus name *Trachelus* Jurine, 1807 by giving it precedence over its senior synonym *Astatus* Panzer, [1801]. The ‘black grain stem sawfly’, *Trachelus tabidus* (Fabricius, 1775), is a pest of cereals in the southern West Palaearctic and in North America.

Keywords. Nomenclature; taxonomy; Hymenoptera; CEPHIDAE; *Astatus*; *Trachelus*; sawfly; West Palaearctic; Nearctic.

Ruling

- (1) Under the plenary power, the Commission has given the generic name *Trachelus* Jurine, 1807 precedence over the name *Astatus* Panzer, [1801], whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Trachelus* Jurine, 1807 (genus: masculine), type species by subsequent designation by Rohwer (1911a) *Sirex tabidus* Fabricius, 1775, with the endorsement that it is to be given precedence over the name *Astatus* Panzer, [1801], whenever the two are considered to be synonyms;
 - (b) *Astatus* Panzer, [1801] (genus: masculine), type species by monotypy *Sirex troglodyta* Fabricius, 1787, with the endorsement that it is not to be given priority over the name *Trachelus* Jurine, 1807, whenever the two are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *tabidus* Fabricius, 1775, as published in the binomen *Sirex tabidus* (specific name of the type species of *Trachelus* Jurine, 1807);
 - (b) *troglodyta* Fabricius, 1787, as published in the binomen *Sirex troglodyta* (specific name of the type species of *Astatus* Panzer, [1801]).

History of Case 3542

An application to conserve the widely used sawfly genus name *Trachelus* Jurine, 1807 by giving it precedence over its senior synonym *Astatus* Panzer, [1801] was received from Stephan M. Blank and Andreas Taeger (*Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany*) on 29 October 2010. After correspondence the case was published in BZN 68: 65–70 (2011). The title, abstract and keywords of the case were published on the Commission’s website. No comments were received on this case.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 68. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 19: Ballerio, Bogutskaya, Brothers, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Minelli, Pape, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Alonso-Zarazaga, Lim and Štys.

Bouchet and Kojima abstained. Fautin, Ng and Pyle were on leave of absence.

Alonso-Zarazaga voted AGAINST and commented that many economically important species have changed their names along the history of zoology, and he could not see why this single pest was used as the main argument to interfere with the application of the Principle of Priority affecting two genera. He felt that the combination *Astatus tabidus* had been used several times before the present and it could be used again with minimal effort. It seemed also that users were not much affected, given that no comment had been received. Also voting AGAINST, Štys said he believed that the Principle of Priority should be followed since both the generic names were in use, and that economic entomologists would surely get used to a change from the more familiar *Trachelus tabidus* to the correct *Astatus tabidus*. He said that this application was overloaded with historical nomenclatural and taxonomic data which were of interest to those dealing with historical changes in the generic concepts and allocation of specific names, but were irrelevant for the problem to be solved.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Astatus Panzer, [1801] *Faunae Insectorum Germanicae initia oder Deutschlands Insecten*. Vol. 7 [1799–1801] (83), Felssecker, Nürnberg, p. 12.

tabidus, *Sirex*, Fabricius, 1775, *Systema Entomologiae sistens Insectorum classes, ordines, genera, species, adjectis synonymis, locis, descriptionibus, observationibus*. [30], 832 pp. Korte, Flensburgi & Lipsiae, p. 326.

Trachelus Jurine, 1807, *Nouvelle méthode de classer les Hyménoptères et les Diptères*, vol. 4(II), Genève & Paris, pp. 70–72, plate 2, fig. 9.

troglodyta, *Sirex*, Fabricius, 1787, *Mantissa Insectorum, sistens eorum species nuper detectas : adjectis characteribus genericis, differentiis specificis, emendationibus, observationibus*, vol. 1. xx, Christ. Gottl. Proft., Hafniæ, pp. 258–259.

OPINION 2307 (Case 3539)***Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 (Insecta, Diptera, TACHINIDAE): usage conserved**

Abstract. The Commission has conserved the current usage of the names *Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 for three well-established genera of tachinid flies by setting aside all type fixations for *Sturmia* Robineau-Desvoidy, 1830 prior to that of *Sturmia vanessae* Robineau-Desvoidy, 1830 by Robineau-Desvoidy (1863), along with all type fixations for *Senometopia* Macquart, 1834 prior to that of *Carcelia aurifrons* Robineau-Desvoidy, 1830 by Townsend (1916).

Keywords. Nomenclature; taxonomy; Diptera; TACHINIDAE; *Sturmia*; *Senometopia*; *Drino*; *Sturmia vanessae*; *Carcelia aurifrons*; *Sturmia atropivora*; tachinid flies; cosmopolitan.

Ruling

- (1) Under the plenary power, the Commission has:
 - (a) set aside all type species fixations for the nominal genus *Sturmia* Robineau-Desvoidy, 1830 before that of *Sturmia vanessae* Robineau-Desvoidy, 1830 by Robineau-Desvoidy (1863);
 - (b) set aside all type species fixations for the nominal genus *Senometopia* Macquart, 1834 before that of *Carcelia aurifrons* Robineau-Desvoidy, 1830 by Townsend (1916).
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Sturmia* Robineau-Desvoidy, 1830 (gender: feminine), type species *Sturmia vanessae* Robineau-Desvoidy, 1830, as ruled in (1)(a) above;
 - (b) *Senometopia* Macquart, 1834 (gender: feminine), type species *Carcelia aurifrons* Robineau-Desvoidy, 1830, as ruled in (1)(b) above.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *vanessae* Robineau-Desvoidy, 1830, as published in the binomen *Sturmia vanessae* (specific name of the type species of *Sturmia* Robineau-Desvoidy, 1830);
 - (b) *aurifrons* Robineau-Desvoidy, 1830, as published in the binomen *Carcelia aurifrons* (specific name of the type species of *Senometopia* Macquart, 1834).

History of Case 3539

An application to conserve the current usage of the names *Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 for three well-established genera of tachinid flies, was received from James E. O'Hara

(*Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*) and Neal L. Evenhuis (*Bishop Museum, Honolulu, HI, U.S.A.*) on 26 October 2010. After correspondence the case was published in BZN 68: 61–64 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 63. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 23: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Lim, Minelli, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kottelat abstained. Fautin, Ng and Pyle were on leave of absence.

Although he voted FOR, Alonso-Zarazaga felt it was important to note a mistake in paragraph 9 of the application. He said that *Stenometopia*, being an unjustified emendation of *Senometopia*, could not therefore be used as a replacement name for *Senometopia* and would thus accompany it in the synonymy under *Sturmia*.

Kottelat ABSTAINED because he had no access to the text of the application.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

aurifrons, *Carcelia*, Robineau-Desvoidy, 1830, *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France. Sciences Mathématiques et Physiques*, (2)2: 182.

Senometopia Macquart, 1834, *Insectes diptères du nord de la France. Tome V. Athéricères: créophiles, oestridentes, myopaires, conopsaires, scénopiniens, céphalopsides*, L. Danel, Lille, p. 296.

Sturmia Robineau-Desvoidy, 1830, *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France. Sciences Mathématiques et Physiques*, (2)2: 171.

vanessae, *Sturmia*, Robineau-Desvoidy, 1830, *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France. Sciences Mathématiques et Physiques*, (2)2: 172.

OPINION 2308 (Case 3480)***Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia; Proboscidea): request to designate a neotype not approved**

Abstract. The Commission has not supported the request to designate a neotype to conserve the usage of the name *Mastodon waringi* Holland, 1920, for a species of extinct South American proboscidean.

Keywords. Nomenclature; taxonomy; Mammalia; Proboscidea; Ecuador; Brazil; *Haplomastodon*; *Cuvieronius*; *Mastodon waringi*; gomphothere; South America.

Ruling

- (1) It is hereby ruled that the application to designate a neotype for *Mastodon waringi* Holland, 1920 is not approved.
- (2) No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3480

An application to designate a neotype to conserve the usage of the name *Mastodon waringi* Holland, 1920 for a species of extinct South American proboscidean was received from Spencer G. Lucas (*New Mexico Museum of Natural History, Albuquerque, NM, U.S.A.*) on 15 October 2008. After correspondence the case was published in BZN **66**: 164–167 (2009). The title, abstract and keywords of the case were published on the Commission's website. Comments were published in BZN **66**: 358–359; **67**: 96, 181–182, 333; **68**: 80–81; **69**: 65.

Decision of the Commission

On 1 March 2012 the members of the Commission were invited to vote on the proposals published in BZN **66**: 165–166. At the close of the voting period on 1 June 2012 the votes were as follows:

Affirmative votes – 9: Brothers, Halliday, Kottelat, Krell, Minelli, Pape, Yanega, Zhang and Zhou.

Negative votes – 14: Alonso-Zarazaga, Ballerio, Bogutskaya, Grygier, Harvey, Kojima, Kullander, Lamas, Lim, Patterson, Rosenberg, Štys, van Tol and Winston. Bouchet abstained.

Fautin, Ng and Pyle were on leave of absence.

Voting AGAINST, Alonso-Zarazaga commented that to his reading, the texts presented in this application indicated neither consensus among specialists nor prevailing usage of any of the names. Moreover, in his opinion, the designation made by the author of the application (paragraph 10) of the neotype of *Mastodon chimborazi* as the neotype of *Mastodon waringi* as well did not fit the requirements of Article 75.3 and was thus invalid, so that the current status of *Haplomastodon* as typified by *Mastodon chimborazi* Proaño was to be maintained. He felt that as the taxonomic dispute was still in process, the Commission should not intervene, as that

would act only to reinforce the nomenclatural acts and their relative priority. Also voting AGAINST, Grygier said that the point of this application was to make *waringi* and *chimborazi* objective synonyms, with the same specimen serving as neotype for both. However, as the Comment by Ferretti (BZN 66: 358–359) had pointed out, the neotype designation for *chimborazi* by Ficarelli et al. (1995) was invalid: part of the original material exists. Designating the proposed specimen as the neotype only of *waringi* would fix the taxonomic concept of that nominal species, but not make it an objective synonym of *chimborazi*. To fulfill the latter goal, an additional proposal was required, asking the Commission to ratify the invalid neotype designation under Article 75.8, but no such proposal was ever made. Grygier felt that the resulting chasm between original intention and effective result was too wide to warrant a ‘yes’ vote. Also Voting AGAINST, Štys said that all the arguments against the original application were summarized by Ferretti (BZN 66: 358–359) and Demirjian (BZN 67: 333). There was a genus or subgenus *Haplomastodon* with a type species *Masthodon chimborazi* with an extant holotype so no Commission’s action was needed. There was a nomen dubium, *Mastodon waringi*, with a non-diagnostic holotype – some taxonomists regarded it as a distinct species some as a senior subjective synonym of *M. chimborazi* – the Commission should not intervene in cases of taxonomic uncertainty and at present a neotype was not needed and not desirable, certainly not the one as suggested by the applicant. Also Voting AGAINST, Winston said that the proposed neotype was from a locality quite distant (4000 km) from that where the species was originally collected. This contradicted the qualifying conditions in Article 76.3.6 ‘...as nearly as practicable from the original type locality...and the same geological horizon...’. ABSTAINING, Bouchet commented that the published comments indicated that the taxonomy was unsettled, and that this should be settled before a nomenclatural decision was made.

No names are placed on Official Lists and Indexes by the ruling given in the present Opinion. The issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

Corrigendum to Opinion 2299 (Case 3529)
(see BZN 69: 150–151)

***Otiorhynchus* Germar, 1824 and *Loborhynchus* Schoenherr, 1823
(Insecta, Coleoptera): emendation of entries on the Official List of
Generic Names in Zoology**

The original reference to the name *Otiorhynchus* Germar, 1822 on p. 151 is to be read as follows:

Otiorhynchus Germar, 1822, *Fauna Insectorum Europae*, vol. 7. 25 nrs. Impensis Car. Aug. Kümmerlii, Halae, no. 12, unnumbered page on the back of the text sheet corresponding to Plate 12.

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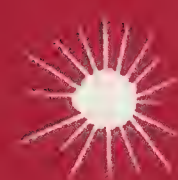
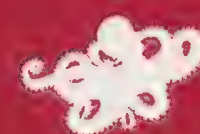


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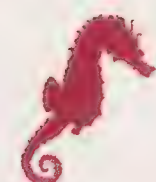
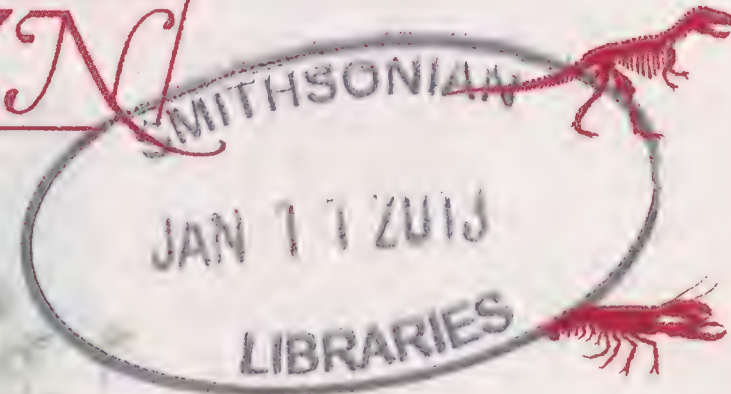
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Cover image: *Paradisaea rubra* Daudin, 1800, red bird-of-paradise, an endemic, near-threatened species from the north-west Papuan Islands of Waigeo, Batanta, Gemien and Saonek. The detail is from Plate 31 of John Gould's '*Birds of New Guinea*,' vol. 1 (1875–1888). (The original image is a colour lithograph © Natural History Museum, London). The inscription on the image says '*Paradisea sanguinea* Shaw'. The name *Paradisaea sanguinea* Shaw, 1809 is a junior synonym of *Paradisaea rubra* Daudin, 1800. Note the correct spelling of the name *Paradisaea*, ruled upon by the Commission (the Opinion is published in BZN 69(1)).

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Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 69, part 3, 30 September 2012) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3606: *Sparus aurata* Linnaeus, 1758 (Pisces, Teleostei, Percomorphi, SPARIDAE): proposed emendation of the specific name. I. Ruiz-Jarabo & J.M. Mancera.

CASE 3607: *Haltica (Dibolia) schillingii* Letzner, 1847 (currently *Dibolia schillingi*; Insecta, Coleoptera, CHRYSOMELIDAE): proposed conservation of the specific name. M. Döberl & I. Löbl.

CASE 3608: *Dasypeltis scabra* var. *atra* Sternfeld, 1913 (currently *Dasypeltis atra*, Reptilia, Squamata, COLUBRIDAE): proposed conservation of the specific name. D.G. Broadley.

CASE 3609: *Bulimus cylindricus* Menke, 1828 (Gastropoda, Stylommatophora, ENIDAE): proposed conservation of the specific name. I. Balashov & F. Welter-Schultes

CASE 3610: *Phelister* Marseul, 1853 (Insecta, Coleoptera, HISTERIDAE): proposed conservation of usage. M.S. Caterino & A.K. Tishechkin.

CASE 3611: *Basilosaurus kochii* Reichenbach, 1847 (currently *Zygorhiza kochii*; Mammalia, Cetacea): proposed replacement of the holotype by a neotype. M.D. Uhen.

CASE 3612: *Onitis aeruginosus* Klug, 1855 (Insecta, Coleoptera, SCARABAEIDAE): proposed conservation of the specific name. M. Cupello.

CASE 3613: *Nyctimystes cheesmani* Tyler, 1964 (Amphibia, Anura, HYLIDAE): proposed emendation of specific name to *cheesmanae*. M.J. Tyler & J.I. Menzies.

Case 3596***Eusparassus* Simon, 1903 (Arachnida Araneae, SPARASSIDAE): proposed conservation of the generic name**

Majid Moradmand

Department of Biology, Faculty of Science, University of Isfahan, Isfahan, Iran & Arachnology, Senckenberg Research Institute, Senckenberganlage 25, 60325 Frankfurt am Main, Germany
(e-mail: Majid.Moradmand@senckenberg.de)

Peter Jäger

Arachnology, Senckenberg Research Institute, Senckenberganlage 25, 60325 Frankfurt am Main, Germany (e-mail: Peter.Jaeger@senckenberg.de)

Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used generic name *Eusparassus* Simon, 1903 for a well-known huntsman spider genus from Africa and Eurasia currently with 30 known valid species. The name is threatened by its little-used senior synonym *Cercetius* Simon, 1902. Simon (1902) established the name *Cercetius* for a monotypic taxon based on a juvenile specimen of *C. perezi* Simon, 1902. The generic name has never been used as valid except in catalogues and other lists. The discovery of adult specimens of *C. perezi* in the type locality and nearby regions supports the synonymy of *Cercetius* with *Eusparassus*. The putative junior synonym *Eusparassus* is however a long-accepted name and it should be conserved to maintain stability of nomenclature in this taxonomic group.

Keywords. Nomenclature; taxonomy; *Eusparassus*; *Cercetius*; *Cercetius perezi*; *Eusparassus dufouri*; huntsman spiders; Persian Gulf; Arabian Peninsula.

1. The genus *Cercetius* Simon, 1902 (p. 253) is a monotypic taxon based on *Cercetius perezi* Simon, 1902. The immature holotype (MNHN 1658–21936) was collected in 1901 during the French mission to the coastal terrestrial regions of the Persian Gulf conducted by J. Bonnier and Ch. Perez. The type locality is Dibba, a coastal geographic region at the northeastern tip of the Arabian Peninsula. Dibba currently lies in the United Arab Emirates and the Sultanate of Oman. Simon (1902) stated the close similarities in traits between *Cercetius* and *Eusparassus* (sub *Sparassus*), in particular the arrangement and relative size of the eyes. He classified *Cercetius* in the subfamily SPARASSINAE. *Cercetius perezi* was cited again by Simon (1903, p. 1026) as a new record from Somalia. Since this time, the monotypic genus *Cercetius* has been used only in catalogues, i.e. Petrunkevich (1928) and Platnick (2012), and a generic checklist and identification key (Jäger & Kunz, 2005).

2. *Eusparassus* Simon, 1903 (pp. 1020, 1023, 1025) is a well-known huntsman spider genus in Africa and Eurasia currently with 30 known nominal species. Moradmand & Jäger (2012) revised the genus *Eusparassus* in Eurasia and presented

the diagnostic characters of this genus. The type species is *Eusparassus dufouri* Simon, 1932 (p. 890), which was proposed for specimens originally mistakenly identified as *Sparassus argelasius* by Latreille (1818).

3. The genus *Sparassus* Walckenaer, 1805 originally included five species one of which was '*Sparassus argelasius*' based on a single male from Bordeaux, France. Walckenaer (1805, p. 40) presented no description or illustration of '*S. argelasius*', which is therefore a nomen nudum. The following year, Walckenaer (1806, p. 146, table 2) provided a description and illustration of this male specimen under the name *Sparassus argelasius*. This species is currently assigned to the genus *Olios* Walckenaer, 1837. Jäger (1999) proposed the synonymy of *Sparassus* Walckenaer, 1805 with *Micrommata* Latreille, 1804.

4. Latreille (1818, pp. 516, 517) examined two female specimens from Spain and mistakenly identified them as '*Micromata argelasia*'. *Micromata* was an incorrect original spelling of *Micrommata* in Latreille (1804); Latreille (1806, pp. 115, 127) amended the spelling of the genus name into '*Micrommata*'. According to Articles 32.2.2 and 33.2.2 of the Code this is a justified emendation and the incorrect original spelling ('*Micromata*') is considered a lapsus calami (original Greek word: το ομμα — eye). Latreille (1806) used *Micrommata* for the first time and used it in this format in his following publications (e.g. Latreille, 1817, p. 92; 1818, p. 515); see Bonnet (1957, p. 2886) for all citations also of subsequent authors. Latreille (1818, p. 516) again used erroneously the incorrect spelling *Micromata* (which was probably a typographical error) along with the correct spelling on p. 515).

5. Simon (1903, p. 1020) noted that *S. argelasius* Walckenaer, 1805 was a nomen nudum and did not enter nomenclature. He considered that Latreille (1818) provided the valid description for Walckenaer's species as *Micrommata argelasia*, but it is likely that Simon (1903) overlooked the valid description of *S. argelasius* Walckenaer, 1806. Simon (1903, p. 1025) established a new genus *Eusparassus* and designated Latreille's (1818) *Micrommata argelasia* (based on the misidentified female specimens) as the type species. Simon (1932, pp. 889, 890) pointed out the misidentification by Latreille (1818) and established the name *E. dufouri* for Spanish specimens previously misidentified as '*Sparassus argelasius*' by Latreille. Simon (1932) designated *E. dufouri* as the type species of the genus *Eusparassus* and assigned Walckenaer's '*Sparassus argelasius*' to the genus *Olios* Walckenaer, 1836. The type species of *Eusparassus* was misidentified under the name '*E. argelasius*', thus *dufour* was selected as the valid specific name for the type species of the genus *Eusparassus*. This designation meets the conditions of Article 70.3.2 (Misidentified type species). According to Article 72.4.2, the type series of *E. dufouri* consists of the female specimens which had been misidentified (*M. argelasia* sensu Latreille, 1818). Since it is generally understood that the material of Latreille in the Muséum d'Histoire Naturelle (Paris) is lost, a neotype of *E. dufouri* was designated, properly described and illustrated by Moradmand & Jäger (2012).

6. Specimens that were later assigned to *Eusparassus* were apparently known to Simon prior to proposing the name *Cercetius*, at least since 1880 (Simon 1880, p. 290). Additionally, *Eusparassus* is the type genus of the family-group name EUSPARASSIDAE Järvi, 1912, which even if no longer used as a family name (Jäger, 1999), is still an available name as subfamily EUSPARASSINAE (e.g. Dunlop et al., 2011; Moradmand & Jäger, 2012).

7. *Cercetius* (due to its juvenile type) has never been properly diagnosed. Somatic features of the holotype of *C. perezii* fit well with those of the genus *Eusparassus*. The cheliceral dentition, intermarginal denticles of the chelicerae, arrangement of the eyes, spination pattern, leg formula and presence of a dark marking on the ventral opisthosoma seen in the immature holotype are found in the newly discovered adult specimens from the type locality and nearby regions. The copulatory structures of the adults clearly place *C. perezii* in the genus *Eusparassus*: male with a parallel U-shaped tegulum and embolus, presence of an embolus membrane near to the embolus tip, a well-developed dorsal RTA (Retro-lateral tibial apophysis) and a ventral RTA reduced in size; female's epigyne with two large lateral lobes, simply long and parallel copulatory ducts which lead to more complex turning loops and a glandular process (Moradmand; in preparation).

8. *Eusparassus* is a long-accepted name and has been widely used after its original designation in 1903 in at least 25 taxonomic papers (Simon, 1909, 1932; Strand, 1906, 1907, 1908; Järvi, 1912, 1914; Reimoser, 1919; Roewer, 1928, 1962; Gravely, 1931; Caporiacco, 1935, 1939, 1941; Schenkel, 1936; Denis 1945, 1947, 1958; Barrientos & Urones, 1985; Jäger, 1999, 2001; Song et al., 1999; Jäger & Yin, 2001; Jäger & Kunz, 2005; Urones, 2006), in four catalogues and faunistic studies (Petrunkovich, 1928; Roewer, 1955; Deltshev, 2011; Platnick, 2012), one palaeozoological (amber) investigation (Dunlop et al., 2011) and one contribution to developmental biology and natural history (Gabriel, 2011).

9. For the sake of nomenclatural stability we request that the junior name *Eusparassus* be given precedence over the senior synonym *Cercetius*. Article 23.9.2 cannot be applied because *Cercetius* was established in 1902, thus the conditions of Article 23.9.1.1 are not met. However the conditions of Article 23.9.1.2 are met, since the junior synonym *Eusparassus* has been used in 31 publications, published by 27 different authors. Therefore we refer this case to the Commission for a ruling under the plenary power.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *Eusparassus* Simon, 1903 precedence over *Cercetius* Simon, 1902, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Eusparassus* Simon, 1903, type species by subsequent designation by Simon (1932) *Eusparassus dufouri* Simon, 1932, with the endorsement that it is to be given precedence over *Cercetius* Simon, 1902, whenever the two are considered to be synonyms;
 - (b) *Cercetius* Simon, 1902, type species by monotypy *Cercetius perezii* Simon, 1902, with the endorsement that it is not to be given priority over *Eusparassus* Simon, 1903, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *dufourii* Simon, 1932, as published in the binomen *Eusparassus dufouri* Simon, 1932, the specific name of the type species of *Eusparassus* Simon, 1903;
 - (b) *perezii* Simon, 1902, as published in the binomen *Cercetius perezii* Simon, 1902, the specific name of the type species of *Cercetius* Simon, 1902.

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References

- Barrientos, J.A. & Urones, M.C. 1985. La colección de araneidos del Departamento de Zoología de la universidad de Salamanca, V: arañas clubionoideas y tomisoideas. *Boletín de la Asociación Española de Entomología*, **9**: 349–366.
- Bonnet, P. 1957. *Bibliographia araneorum*. Toulouse, **2**(3): 1927–3026.
- Caporiacco, L. di. 1935. Aracnidi dell'Himalaia e del Karakoram, raccolti dalla Missione italiana al Karakoram (1929–VII). *Memoire della Societa Entomologica Italiana*, **13**: 161–263.
- Caporiacco, L. di. 1939. Arachnida In: Missione biologica nel paese dei Borana. Raccolte zoologiche. *Reale Accademia d'Italia*, **3**: 303–385.
- Caporiacco, L. di. 1941. Arachnida (esc. Acarina). *Missione biologica Sagan-Omo*, **12**(6): 1–159.
- Deltshev, C. 2011. The faunistic diversity of cave-dwelling spiders (Arachnidae, Araneae) of Greece. *Arachnologische Mitteilungen*, **40**: 23–32.
- Denis, J. 1945. Descriptions d'araignées nord-africaines. *Bulletin de la Société d'Histoire Naturelle*, **79**: 41–57.
- Denis, J. 1947. Spiders in Results of the Armstrong College expedition to Siwa Oasis (Libyan Desert), 1935. *Bulletin de la Société Fouad 1er d'Entomologie*, **31**: 17–103.
- Denis, J. 1958. Araignées (Araneidea) de l'Afghanistan. I. *Videnskabelige Meddelelser fra den Naturhistorike Forening i Kjöbenhavn*, **120**: 81–120.
- Dunlop, J.A., Penney, D., Dalüge, N., Jäger, P., McNeil, A., Bradley, R.S., Withers, P.J. & Preziosi, R.F. 2011. Computed tomography recovers data from historical amber: an example from huntsman spiders. *Naturwissenschaften*, **98**(6): 519–527.
- Gabriel, R. 2011. Some notes on the development of the young and parasites of *Eusparassus walckenaeri* (Audouin, 1826) collected in Turkey (Araneae, Sparassidae). *Newsletter of British Arachnological Society*, **122**: 9–12.
- Gravely, F.H. 1931. Some Indian spiders of the families Ctenidae, Sparassidae, Selenopidae and Clubionidae. *Records of the Indian Museum, Calcutta*, **33**: 211–282.
- Jäger, P. 1999. Sparassidae - the valid scientific name for the huntsman spiders (Arachnida: Araneae). *Arachnologische Mitteilungen*, **17**: 1–10.
- Jäger, P. 2001. Diversität der Riesenkrabbenspinnen im Himalaya. Über eine Radiation zweier Gattungen in den Schneetropen. (Araneae: Sparassidae: Heteropodinae). *Courier Forschungsinstitut Senckenberg*, **232**: 1–136.
- Jäger, P. & Kunz, D. 2005. An illustrated key to genera of African huntsman spiders (Arachnida, Araneae, Sparassidae). *Senckenbergiana Biologica*, **85**: 163–213.
- Jäger, P. & Yin, C.M. 2001. Sparassidae in China. 1. Revised list of known species with new transfers, new synonymies and type designations (Arachnida: Araneae). *Acta Arachnologica*, **50**: 123–134.
- Järvi, T.H. 1912. Das Vaginalsystem der Sparassiden. I. Allgemeiner Teil. *Annales Academiae Scientiarum Fennicae* (A), **4**: 1–131.
- Järvi, T.H. 1914. Das Vaginalsystem der Sparassiden. II. *Annales Academiae Scientiarum Fennicae* (A), **4**: 132–248.
- Latreille P.A. 1804. *Histoire naturelle générale et particulière des Crustacés et des Insectes*. Paris, **7**: 144–305.
- Latreille P.A. 1806. *Genera crustaceorum et insectorum secundum ordinem naturalem in familias disposita, Iconibus exemplisque*. Paris, 302 pp. (Araneae, pp. 82–127).
- Latreille P.A. 1817. Articles sur les Araignées. *Dictionnaire (Nouveau) d'Histoire Naturelle*, Nouvelle édition, Paris, art. 7–11, 13, 17–18.

- Latreille P.A.** 1818. Articles sur les Araignées. *Dictionnaire (Nouveau) d'Histoire Naturelle*, Nouvelle édition, Paris.
- Moradmand, M. & Jäger, P.** 2012. Taxonomic revision of the huntsman spider genus *Eusparassus* Simon, 1903 (Araneae: Sparassidae) in Eurasia. *Journal of Natural History*, **46** (39–40): 2439–2496.
- Petrunkévitch, A.** 1928. Systema Araneorum. *Transactions of Connecticut Academy of Arts and Sciences*, **29**: 1–270.
- Platnick, N.I.** 2012. *The world spider catalog, version 12.5*. American Museum of Natural History, New York. Available from <http://research.amnh.org/iz/spiders/catalog>. (Accessed: 15 January 2012)
- Reimoser, E.** 1919. Katalog der echten Spinnen (Araneae) des paläarktischen Gebietes. *Abhandlungen der Kaiserlich-Königlichen Zoologisch-botanischen Gesellschaft*, **10**(2): 1–280.
- Roewer, C.F.** 1928. Araneae. In: Zoologische Streifzüge in Attika, Morea, und besonders auf der Insel Kreta, II. *Abhandlungen des Naturwissenschaftlicher Verein, Bremen*, **27**: 92–123.
- Roewer, C.F.** 1955. Die Araneen der Österreichischen Iran-Expedition 1949/50. *Sitzungsberichte der Österreichischen Akademie der Wissenschaften (I)*, **164**: 751–782.
- Roewer, C.F.** 1962. Araneae Dionycha aus Afghanistan II. *Acta Universitatis Lundensis (N.F.)*, **58**(4): 1–34.
- Schenkel, E.** 1936. Schwedisch-chinesische wissenschaftliche Expedition nach den nordwestlichen Provinzen Chinas, unter Leitung von Dr. Sven Hedin and Prof. Su Ping-chang. Araneae gesammelt vom schwedischen Arzt der Expedition Dr. David Hummel 1927–1930. *Arkiv för Zoologi*, **29A** (1): 1–314.
- Simon, E.** 1880. Révision de la famille des Sparassidae (Arachnides). *Actes de la Société Linnéenne de Bordeaux*, **34**: 223–351.
- Simon, E.** 1902. Arachnides recueillis au cours de la Mission de MM. J. Bonnier et Ch. Perez au Golfe Persique (Mars–Avril 1901). *Bulletin du Muséum d'Histoire Naturelle, Paris*, **8**: 252–254.
- Simon, E.** 1903. *Histoire naturelle des Araignées*. Encyclopédie Roret, Paris, **2**: 669–1080.
- Simon, E.** 1909. Etude sur les arachnides recueillis au Maroc par M. Martinez de la Escalera en 1907. *Mémoires de la Real Sociedad Española de Historia Natural*, **6**(1): 1–43.
- Simon, E.** 1932. *Les arachnides de France*. Pp. 773–978 in: Tome VI. Synopsis général et catalogue des espèces françaises de l'ordre des Araneae, 4e partie. Encyclopédie Roret, Paris.
- Song, D.X., Zhu, M.S. & Chen, J.** 1999. *The spiders of China*. 640 pp. Hebei Science & Technology Publishing House, Shijiazhuang.
- Strand, E.** 1906. Diagnosen nordafrikanischer, hauptsächlich von Carlo Freiherr von Erlanger gesammelter Spinnen. *Zoologischer Anzeiger*, **30**: 604–637.
- Strand, E.** 1907. Spinnen des zoologischen Instituts in Tübingen. *Zoologische Jahrbücher Systematik*, **24**, 391–468.
- Strand, E.** 1908. Nordafrikanische, hauptsächlich von Carlo Freiherr von Erlanger gesammelte Clubioniden. *Archiv for Mathematik og Naturvidenskab*, **29**(2): 1–70.
- Urones, C.** 2006. El género *Eusparassus* Simon, 1903 (Araneae, Sparassidae) en la Península Ibérica, con la descripción de una especie nueva. *Revista Ibérica de Aracnología*, **12**: 99–115.
- Walckenaer C.A.** 1805. *Tableau des aranéides ou caractères essentiels des tribus, genres, familles et races que renferme le genre Aranea de Linné, avec la désignation des espèces comprises dans chacune de ces divisions*. 88 pp Paris.
- Walckenaer C.A.** 1806. *Histoire naturelle des aranéides*, vols. 1–3, 184 pp. Chez Amand König, Paris-Strasbourg.

Acknowledgement of receipt of this application was published in BZN 69: 84.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3594***Ecdyonurus* Eaton, 1868 and *Ephemera venosa* Fabricius, 1775 (currently *Ecdyonurus venosus*; Insecta, Ephemeroptera): proposed conservation of usage by designation of a neotype for *Ephemera venosa***

Ernst Bauernfeind

clo Naturhistorisches Museum Wien, Burgring 7, A-1010 Wien, Austria
(e-mail: ernst.bauernfeind@nhm-wien.ac.at)

Arne Haybach

An den Mühlwegen 23, D-55129 Mainz, Germany
(e-mail: haybach@gmx.de)

Abstract. The purpose of this application, under Articles 75.6 and 81 of the Code, is to conserve the prevailing usage of the generic name *Ecdyonurus* Eaton, 1868 and the specific name *Ecdyonurus venosus* (Fabricius, 1775), by setting aside the existing name-bearing type of *Ecdyonurus venosus* and designating a neotype. The existing name-bearing type of *E. venosus*, type species of *Ecdyonurus* Eaton, 1868, is not in accord with the current use of the name *Ecdyonurus venosus* sensu auct.

Keywords: Nomenclature; taxonomy; Insecta, Ephemeroptera; HEPTAGENIIDAE; *Ecdyonurus*; *Ecdyonurus venosus*; mayflies.

1. *Ephemera venosa* Fabricius, 1775 is the type species of the mayfly genus *Ecdyonurus* Eaton, 1868, family HEPTAGENIIDAE, by original designation. Since Kimmins's (1942) redescription of *Ecdyonurus venosus* subsequent authors have universally used the name *Ecdyonurus venosus* (Fabricius, 1775) in this sense in hundreds of scientific papers.

2. Fabricius (1775, p. 304) briefly described the species *Ephemera venosa* (in the imaginal stage), indicating as the type locality the habitat of *Ephemera venosa*: 'Habitat in Daniae paludosis' [= living in Danish marshlands].

3. Subsequently Gmelin (1790, p. 2629) identified this species with the description and plate of de Geer's (1771, pp. 652–656, pl. 18, figs. 13 [larva] & fig. 4 [imago]) 'Ephémère grise en dessous' (= *Ephemera fuscogrisea* Retzius, 1783; currently placed in *Kageronia* Matsumura, 1931, family HEPTAGENIIDAE, by most authors). However, considering the rediscovered type specimen of *Ephemera venosa* (see para. 15 below), the association of the larva figured in de Geer (1771) with the winged stage of *Ephemera venosa* had been based on a misidentification of the latter. In any case the original verbal description is insufficient for a clarification of the taxonomic status to define the identity of *Ephemera venosa* Fabricius, 1775 objectively.

4. Fabricius (1793, p. 70) obviously accepted Gmelin's (1790) interpretation by including the citation of de Geer (1771, pl. 18, figs. 1–4) in his otherwise unchanged diagnosis for *Ephemera venosa*.

5. Stephens (1829, p. 306) transferred *Ephemera venosa* to the genus *Baetis* Leach, 1815, referring explicitly to the drawings in de Geer (1771, pl. 18, figs. 1–4).

6. Curtis (1834a, p. 220) described *Baetis dispar* [currently *Ecdyonurus dispar* (Curtis, 1834)] and remarked: ‘The Pseudimago of this insect may be the *E. venosa* DeGeer.’ An excellent coloured plate of the male imago of *Baetis dispar* was also provided by Curtis (1834 b, pl. 484 & text [without pagination]), which however could easily be confused with other related taxa currently included in *Ecdyonurus* Eaton.

7. Burmeister (1839, p. 801) considerably changed and broadened the diagnosis for *Baetis* Leach, referring explicitly to the drawings in de Geer (1771, pl. 18, figs. 1–4) and listed *Baetis dispar* Curtis as a junior synonym of *B. venosa* (Fabricius).

8. Eaton (1868a, p. 142, footnote) considered Burmeister’s (1839) interpretation of *Baetis* Leach ‘a misapplied name’ and established the new genus *Ecdyonurus* to accommodate some taxa [with overall appearance of imagines similar to Curtis’s plate (1834 b, pl. 484) and with larvae resembling the drawings in de Geer (1771, pl. 18, figs. 1–3)], which had been included by Burmeister (1839) in *Baetis* Leach, 1815. Eaton (1868a, p. 142) provided no additional description and based the new genus-group taxon on the oldest name in Burmeister’s synonymy of *Baetis venosa*: ‘Type, *E[phemera]. venosa*, Fabricius.’ Later Eaton (1868b, p. 90) placed *Ecdyonurus* in the synonymy of *Heptagenia* Walsh, 1863 and at the same time changed the ‘misspelt’ original spelling to *Ecdyurus*. *Ecdyurus* Eaton has been considered an unjustified emendation (Article 33.2.3 of the Code) by Ulmer (1920, p. 136) and practically all subsequent authors.

9. Eaton (1871, p. 151, pl. vi, fig. 24) provided a detailed description and drawings for the winged stages of his interpretation of *Heptagenia venosa* (Fabricius, 1775), based on material from England, France and Switzerland (including, however, *Ephemera fuscogrisea* Retzius, 1783 and *Baetis dispar* Curtis, 1834). His drawing of the male penis indeed represents the boot-shaped penis lobes and median spine-like titillators characteristic of taxa currently placed in *Ecdyonurus* Eaton, 1868.

10. Later Eaton (1881, p. 25) reinstated the genus *Ecdyonurus* Eaton, 1868 (under the spelling *Ecdyurus*).

11. In his Revisional Monograph Eaton (1883, pl. 24; 1884, pls. 61 & 62; 1885, p. 276) maintained a very broad concept for *Ecdyonurus* (under the spelling *Ecdyurus*), providing, however, detailed drawings (1884, pl. 62, figs. 1 & 4–23) of the larva of *E. fluminum* [currently *Ecdyonurus dispar* (Curtis)] which exhibits typical characters for the genus *Ecdyonurus* sensu auct. (pronotal projections, shape and setation of labrum, galeo-lacinia and hypopharynx, a.o.). *Ecdyurus venosus* sensu Eaton (1887, p. 283) clearly represents a composite taxon including at least five species-group taxa currently considered distinct: *Ecdyonurus venosus* sensu Kimmins (1942) et auct. sequ.; *Ecdyonurus torrentis* Kimmins, 1942; *Ecdyonurus dispar* (Curtis, 1834); *Ecdyonurus picteti* (Meyer-Dür, 1864) and *Kageronia fuscogrisea* (Retzius, 1783).

12. When Bengtsson (1912, p. 15) revised collections of older Scandinavian authors he was unable to locate Fabricius’s collection. From Fabricius’s description of the type locality and habitat (Fabricius, 1775) he concluded that *Ephemera venosa* might probably be identified either with *Kageronia fuscogrisea* (Retzius) or *Siphonurus* sp. It has to be observed that *Ecdyonurus venosus* sensu auct. does not occur in Denmark



Fig. 1. *Ecdyonurus venosus* (Fabricius, 1775); (a) proposed neotype, scale bar 5 mm; (b) proposed neotype, male genitalia on slide.

(type locality of *Ephemera venosa*) and larvae typically inhabit running waters, not marshes [contrary to Fabricius (1775 and 1793)]. In the absence of the respective type material, however, Bengtsson undertook no formal nomenclatural steps.

13. In a detailed taxonomic and nomenclatural study on the 'venosus-complex' Kimmins (1942, p. 490) revised the English taxa of *Ecdyonurus* Eaton, cleared up (most of) the complicated synonymy and provided a careful description of what he considered to represent *Ecdyonurus venosus* (Fabricius), based mainly on material from England (larvae and imagines, including reared material). Obviously he was not aware of Bengtsson's 1912 paper and did not question the identity of *Ephemera venosa* Fabricius.

14. Literally all subsequent authors followed Kimmins (1942) in his interpretation of *Ecdyonurus venosus* (Fabricius, 1775) and until now more than 40 species have been newly described or redescribed accepting his taxonomic concept for the species-group taxon *Ecdyonurus venosus* sensu auct.

15. In 2003 Jacob and Haybach reinvestigated the only extant type specimen of *Ephemera venosa* Fabricius, 1775 (family HEPTAGENIIDAE) in the Zoological Museum of Copenhagen. The pinned female subimago bears an old label inscribed 'venosa', acknowledged to represent Fabricius' handwriting (figured in Haybach & Jacob, 2006, p. 6, Fig.1). The specimen belongs without doubt to the genus *Siphonurus* Eaton, 1868 (Eaton, 1868 b, p. 89), family SIPHLONURIDAE, and may most probably be identified with *Siphonurus lacustris* Eaton, 1870 (p. 7). If the type specimen were to be allowed to stand the stability of nomenclature would be seriously threatened. Numerous taxa in two widely separated families would be affected by the necessary nomenclatural changes: Following the Principle of Priority (Article 23 of the Code) the long established genus-group name *Siphonurus* Eaton, 1868 (published September 1868 and including currently over 50 nominal species-group taxa) would become a junior subjective synonym of *Edyonurus* Eaton, 1868 (published April 1868). Following the Principle of Homonymy (Article 52 of the Code) the genus-group name *Ecdyonurus* sensu Kimmins (1942) et auct. sequ. would become a junior homonym of *Ecdyonurus* Eaton, 1868 (1868a) and would have to be replaced by the next oldest available synonym *Ecdyurus* Eaton, 1868 (1868b), requiring the transfer of at least 60 nominal species-group taxa currently included in *Ecdyonurus* sensu Kimmins (1942) et auct. sequ. To avoid this unwanted and excessive disruption of nomenclatural stability it seems advisable to propose the solution under Article 75.6 of the Code.

16. Among the material used by Kimmins (1942, p. 492) for his revision and redescription of *Ecdyonurus venosus*, a male imago specimen in the Natural History Museum, London (labelled Wales, Cardiganshire, Tregarron, 30.vi.1930, E.M. Moseley, genitalia on slide) obviously served as reference for the drawings (p. 496, fig. 4; male genitalia and details of penis). This specimen is in taxonomic accord with the current use of the name *Ecdyonurus venosus* (both in pattern of coloration and morphological structures) and would therefore be most suitable for designation as neotype for *Ephemera venosa* Fabricius, 1775 (Figs. 1 & 2).

17. Application of Article 70.3.2 would probably allow maintaining current usage for the genus-group name *Ecdyonurus* Eaton, but would not solve the problem of the species-group name *Ephemera venosa* Fabricius. As explained under para. 15 above (and already addressed by Belfiore & D'Antonio, 1991, p. 255) designation of a

neotype for *Ephemera venosa* Fabricius seems absolutely necessary to conserve prevailing usage of both the generic name *Ecdyonurus* and the specific name *Ecdyonurus venosus* (Fabricius, 1775). We therefore request a Commission's ruling under Articles 75.6 and 81 of the Code.

18. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *Ephemera venosa* Fabricius, 1775 and designate as neotype the male imago specimen in the Natural History Museum, London (labelled Wales, Cardiganshire, Tregarron, 30.vi.1930, E.M. Moseley);
- (2) to place on the Official List of Generic Names in Zoology the name *Ecdyonurus* Eaton, 1868 (gender: masculine), type species by original designation *Ephemera venosa* Fabricius, 1775;
- (3) to place on the Official List of Specific Names in Zoology the name *venosa* Fabricius, 1775, as published in the binomen *Ephemera venosa* and as defined by the neotype designated in (1) above.

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References

- Belfiore, C. & D'Antonio, C. 1991. Faunistic, taxonomic, and biogeographical studies of Ephemeroptera from southern Italy. Pp. 253–261 in Alba-Tercedor J. & A. Sánchez-Ortega (Eds.), *Overview and strategies of Ephemeroptera and Plecoptera. Proceedings of VIth International Ephemeroptera Conference (24–28 July) and Xth International Symposium on Plecoptera (27–30 July 1989), Granada, Spain*. The Sandhill Crane Press Inc., Gainesville, Florida, U.S.A.
- Bengtsson, S. 1912. An analysis of the Scandinavian species of Ephemerida described by older authors. *Arkiv för Zoologi*, 7(36): 1–21.
- Burmeister, H. 1839. Ephemerina. *Handbuch der Entomologie*. Bd. 2, 2. Abth., 2. Hälfte (Neuroptera). Pp. xii, 757–1050. Theod. Chr. Fr. Enslin, Berlin.
- Curtis, J. 1834a. Descriptions of some nondescript British species of mayflies of anglers. *London and Edinburgh Philosophical Magazine and Journal of Science*, 3rd Series, 4(26): 120–125.
- Curtis, J. 1834b. *British entomology*, vol. 11, pls. 482–529 [& text, without pagination]. T. Hurst, St. Pauls's Churchyard, London.
- Eaton, A.E. 1868a. Remarks upon the Homologies of the Ovipositor. *Transactions of the Royal Entomological Society of London*, 1868: 141–144, London.
- Eaton, A.E. 1868b. An outline of a re-arrangement of the genera of Ephemeridae. *Entomologist's Monthly Magazine*, 5: 82–91, London.
- Eaton, A.E. 1870. On some new British species of Ephemeridae. *Transactions of the Royal Entomological Society of London*, 1870(1): 1–8.
- Eaton, A.E. 1871. A Monograph on the Ephemeridae. *The Transactions of the Entomological Society of London*, 1871: 1–164, London.
- Eaton, A.E. 1881. An announcement of new genera of the Ephemeridae. *Entomologist's Monthly Magazine*, 18: 21–27, London.

- Eaton, A.E.** 1883–1888. A Revisional Monograph of Recent Ephemeridae or Mayflies. *Transactions of the Linnean Society, London (Zoology)* 2(3): 1–352, 65 pls. [issued in 6 parts].
- Fabricius, J.C.** 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi & Lipsiae.
- Fabricius, J.C.** 1793. *Entomologia Systematica*, vol. 2. 519 pp. Hafniae.
- Geer, C. de.** 1771. *Des Éphémères*. Mémoires pour servir a l'histoire des Insectes. Tom. II, Part. 2. Pp. [1–3], 617–1175, [1], Pl. 16–43. De l'Impr. de Pierre Hesselberg, Stockholm.
- Gmelin, J.F.** 1790. *Caroli A Linné, Systema Naturae*. Tom.1, Pars V. Editio decima tertia, aucta, reformata; cura Jo. Frid. Gmelin. Pp. 2225–3020. G.E. Beer, Lipsiae.
- Haybach, A. & Jacob, U.** 2006. Zwei nomenklatorische Problemfälle unter den europäischen Eintagsfliegen: *Ephemera venosa* Fabricius, 1775 und *Ephemera cincta* Retzius, 1783 nebst Anmerkungen zu den weiteren Typen der Sammlung Fabricius (Insecta: Ephemeroptera). Two nomenclatural problems in European mayflies: *Ephemera venosa* Fabricius, 1775 and *Ephemera cincta* Retzius, 1783 with notes on the other types in the collection of Fabricius (Insecta: Ephemeroptera). *Lauterbornia*, 58: 3–15.
- Kimmins, D.E.** 1942: The British Species of the Genus *Ecdyonurus* (Ephemeroptera). – *Annals and Magazine of Natural History*, (11)9: 486–507.
- Leach, W.E.** 1815. Entomology. Pp. 57–172 in Brewster D. (Ed.), *Edinburgh encyclopaedia*, vol. 9. William Blackburn. Edinburgh.
- Matsumura, S.** 1931. Ephemerida. Pp. 1465–1480 in Matsumura, S. (Ed.), *6000 Illustrated Insects of the Japanese Empire*. Tōkō Shoin. Tōkyō.
- Meyer-Dür, L.R.** 1864. Zusammenfassung der auf meiner Reise durch Tessin und Oberengadin (1863) beobachteten und eingesammelten Neuropteren. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 1: 219–225.
- Retzius, A.J.** 1783. *Caroli de Geer genera et species Insectorum*. Pp. vi, 1–220. Apud Siegfried Lebrecht Crusium. Lipsiae.
- Stephens, J.F.** 1829. *A systematic catalogue of British insects*. Pp. 1–388. Baldwin & Cradock, London.
- Ulmer, G.** 1920. Übersicht über die Gattungen der Ephemeropteren nebst Bemerkungen über einzelne Arten. *Stettiner Entomologische Zeitung*, 81: 97–144.
- Walsh, B.D.** 1863. Observations on certain N.A. Neuroptera, by H. Hagen, M.D., of Königsberg, Prussia; translated from the original French MS., and published by permission of the author, with notes and descriptions of about twenty new N.A. species of Pseudoneuroptera. *Proceedings of the Entomological Society of Philadelphia*, 2: 167–272.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3573***Papilio narcissus* Fabricius, 1798 (currently *Heteropsis narcissus*; Lepidoptera, NYMPHALIDAE): proposed conservation of the specific name**

Emilio Balletto

Dipartimento di Biologia Animale, Via Accademia Albertina 17 – I-10123, Torino, Italy (e-mail: emilio.balletto@unito.it)

David C. Lees*

Department of Life Sciences, Natural History Museum, Cromwell Road, London, SW7 5BD, U.K. (e-mail: dclees@gmail.com)

**Corresponding author*

Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Heteropsis narcissus* (Fabricius, 1798), a junior primary homonym of *Hypochrysops narcissus* (Fabricius, 1775). Both names are currently in use to designate separate and well-recognized species, belonging to two distinct genera in two butterfly families from different geographic regions, *Heteropsis* Westwood, 1850 (NYMPHALIDAE from the Malagasy Region) and *Hypochrysops* C. & R. Felder, 1860 (LYCAENIDAE from the Australian region). As both specific names are currently widely used without confusion for taxa in different biogeographic regions, we request the Commission to rule that the name *Papilio narcissus* Fabricius, 1798 be conserved despite being a junior homonym of *Papilio narcissus* Fabricius, 1775.

Keywords. Nomenclature; taxonomy; NYMPHALIDAE; LYCAENIDAE; SATYRINAE; THECLINAE; *Hypochrysops*; *Heteropsis*; *Hypochrysops narcissus*; *Heteropsis narcissus*; Narcissus Jewel; Madagascar; Comoros; Mascarenes; Mauritius; Australia.

1. *Papilio narcissus* Fabricius, 1775 and *Papilio narcissus* Fabricius, 1798 are primary homonyms (Lees et al., 2003; Lamas, 2010). Both are currently widely used for two different species, the first in the family LYCAENIDAE, subfamily THECLINAE, tribe LUCINI, genus *Hypochrysops* in the Australasian tropics, and the second in the family NYMPHALIDAE, subfamily SATYRINAE, tribe SATYRINI, subtribe MYCALESINA, genus *Heteropsis* in the Afrotropics (Malagasy Region). *Heteropsis narcissus* has no regularly used common name and *Hypochrysops narcissus* is known as the Narcissus Jewel; both are well known species. The two species have not been considered congeneric since the 19th century. The junior homonym has six junior subjective synonyms detailed here and replacement with the next available synonym at species level might appear straightforward. However, the species-group name of the relevant populations of the satyrine butterfly from Mauritius lacks a junior synonym, and would require a new name at potential subspecific rank.

2. *Papilio narcissus* Fabricius, 1775 (p. 524; n° 342) was transferred to the genus *Polyommatus* Latreille, 1804 by Godart ([1824], p. 661, then to *Miletus* Hübner,

[1819] by Butler ([1870], p. 159), and finally to its present genus, *Hypochrysops* C. & R. Felder, 1860 by Druce (1891, p. 189). *Papilio narcissus* Fabricius, 1798 (p. 428) was transferred to the genus *Satyrus* Latreille, 1810 by Godart ([1824], p. 551) in which it was maintained by Boisduval (1833, p. 207), to *Coenonympha* Hübner, [1819] by Doubleday (1848, p. 33), and later to *Mycalesis* Hübner, 1818, by Trimen (1866, p. 336), in which it was also included by Butler (1868a, p. 721; 1868b, p. 146; [1870], p. 35). It was later moved to the genus *Henotesia* Butler, 1879 by Aurivillius (1899, p. 63) in which it has frequently been placed (e.g. Roos, 2003), and finally to *Heteropsis* Westwood, [1850] by Lees et al. (2003). The name *narcissus* is in current use in two different genera. As recognised by Lees et al. (2003), under Article 23.9.5 of the Code, it is mandatory to submit an application to the Commission for a decision in the interest of nomenclatural stability.

3. *Papilio narcissus* Fabricius, 1775 (p. 524, n° 342) is currently classified as *Hypochrysops narcissus* (Fabricius, 1775), a well-known Australian lycaenid butterfly species. The type locality was cited as ‘nova Hollandia’ [= Australia, probably Cooktown, Queensland: (see Sands, 1986, p. 37; Edwards et al., 2001, p. 231)]. The type deposition is at the Natural History Museum, London (BMNH). The type series comprises one male ventrally mounted specimen, BMNH(E) #668218, referred to as ‘holotype’ by Sands (1986, p. 37) and thus lectotype under Article 74.6 of the Code, a second male dorsally mounted specimen in the Hunterian Museum, Glasgow, GLAHM 127082, thus paralectotype (identified as part of the original Fabricius material by Harish Gaonkar in November 2003 on the website of the Hunterian Museum) and one further paralectotype from Zoological Museum of Kiel University, now on permanent loan to the Zoological Museum of the Natural History Museum in Copenhagen (ZMUC) (see Zimsen, 1964, p. 517 and also Kristensen & Karsholt, 2008a). *Hypochrysops narcissus* has several subjective junior synonyms currently in use to designate up to six subspecies (two, including the nominotypical subspecies, from NE Queensland, Australia and the Torres Strait islands, and up to four other subspecies from Indonesia (Irian Jaya) and Papua New Guinea; see Sands, 1986). Although some subspecies may vary clinally (Braby, 2000, p. 654), its nomenclature is not expected to change significantly. In this case, the most senior available synonym (according to Sands, 1986) is *Hesperia livius* Fabricius, 1793 (p. 315, n° 194). The type material is probably lost (see Zimsen, 1964, p. 563, n° 1067; Edwards et al., 2001, p. 232 and Kristensen & Karsholt, 2008b). TL: ‘in Indiis’ [recte somewhere in the Australian region, perhaps mainland Australia].

4. *Papilio narcissus* Fabricius, 1798 (p. 428) is the original combination of a well known butterfly species currently classified in *Heteropsis* Westwood, [1850] (type species by monotypy *Heteropsis drepana* Westwood, 1850; Lepidoptera, NYMPHALIDAE: SATYRINAE; see Lees, 1997; Lees et al., 2003; Kodandaramaiah et al., 2010). This species is currently listed as *Heteropsis narcissus* (Fabricius, 1798) (see M.C. Williams, 2007). Its type locality was originally stated as ‘ad Cap. Bon. Spei’ [Cape of Good Hope, South Africa] and was later corrected to ‘Mauritius’ by Butler (1868b, p. 146, n° 84 and [1870], p. 35, n° 14). The type material is preserved in the Copenhagen Zoological Museum (ZMUC two specimens: see Zimsen, 1964, p. 581; Lees et al., 2003; Kristensen & Karsholt, 2008b). From the two known syntypes, the dorsally mounted male ZMUC00020829 is here designated as lectotype and the side mounted female ZMUC00020830 as paralectotype. Both specimens apparently

belong to the Mauritius population. The species has been considered valid (Ackery et al., 1995, p. 299; Lees et al., 2003) and is part of a group of at least six morphologically slightly different taxa either treated as separate species (Ackery et al., 1995, pp. 298–299; Turlin, 1994, pp. 373–376) or, more recently, as subspecies of *H. narcissus* (Lees et al., 2003, Tab. 8.50; M.C. Williams, 2007), a situation that might require further resolution. Each *H. narcissus* subspecies is endemic to a separate sub-equatorial Indian Ocean island within the Malagasy Subregion of the Afrotropical Region, specifically in the Comoros, Madagascar and Mascarenes (excluding Rodrigues). By date of publication, we have:

- (a) *Papilio narcissus* Fabricius, 1798 (p. 428). TL (Type locality): [Mauritius].
- (b) *Mycalesis fraterna* Butler, 1868 (p. 145, n° 83, Pl. 3, Fig. 13). TL: ‘Madagascar’. TD (Type Deposition): BMNH.
- (c) *Mycalesis evanescens* Saalmüller, 1884 (p. 91, n° 140). TL: ‘N.-B.’ [= Nosy-Bé]. TD: Frankfurt. Ackery et al. (1995, p. 299) treated *M. evanescens* as a synonym of ‘*Henotesia narcissus fraterna* (Butler, 1868) and Lees (1997, p. 381) considered this taxon to represent just a wet season form of ‘*Heteropsis fraterna*’. Considering that Nosy-Bé was joined to Madagascar during recent glaciations, *M. evanescens* is unlikely to represent an insular subspecies of *Heteropsis narcissus*.
- (d) *Culapa mayottensis* Oberthür, 1916 (p. 228, n° 81, Pl. CCCLXIX, Figs. 3077–3078). TL: ‘île Mayotte’ [Comoro Islands]; TD: BMNH.
- (e) *Culapa borbonica* Oberthür, 1916 (p. 232, n° 84, Pl. CCCLXIX, Figs. 3083–3084). TL: ‘île Bourbon [= Réunion]: Salazie’. TD: BMNH.
- (f) *Culapa comorensis* Oberthür, 1916 (p. 229, n° 82, Pl. CCCLXIX, Figs. 3079–3080). TL: ‘îles Comores’ [= Comoro Islands]. Lectotype collected by Léon Humblot in 1885/1886 attributed to the Anjouan population by Turlin (1994, p. 375, n° 5); status of the Mohéli population therefore requires further evaluation. TD: BMNH.
- (g) *Culapa comorensis salimi* Turlin, 1994 (p. 375, [Pl. 1], Figs 1, 2). TL: ‘Grande Comore: 4/5 km Est de Nioumbadjou Bandalamadji, 640m 15/18.III.1980’ [Comoro Islands]. TD: Muséum National d’Histoire Naturelle, Paris.

No objective, nor other subjective junior synonyms of the name *Papilio narcissus* Fabricius, 1798 are available.

5. The case, involving an application to consider under Article 23.9.5 of the Code a case of primary homonymy already recognized by Lees et al. (2003) and Lamas (2010, p. 199), is relatively straightforward in that it only leaves two options:

- (i) The Commission rules under its plenary power that both names are deemed available (they are unlikely to be confused as the types come from different regions). This course of action was taken for instance in the case of *Papilio sapho* Drury, 1782, a junior primary homonym of *Papilio sapho* Pallas, 1771, nymphalid butterflies currently treated in different genera and biogeographic regions, for which case the Commission ruled that Drury’s name is not invalid by reason of being a junior primary homonym (BZN 63(2): 144–145, June 2006).
- (ii) The Commission recognizes the state of homonymy and the junior homonym, *Papilio narcissus* Fabricius, 1798, would need a replacement name. In this case, the junior homonym would be replaced by a new name, to designate the

Mauritius populations (Lamas, 2010). In order to retain the currently used concept of the species, this new name would be introduced as a subspecies of *Heteropsis fraterna* (Butler, 1868).

6. Both names which have been widely used in previous works (e.g. Manders, 1908; Vinson, 1938; Desegaulx de Nolet, 1982; Ackery et al., 1985; Sands, 1986; Parsons, 1998; Braby, 2000; Guillermet, 2004; J.R. Williams, 2007; M.C. Williams, 2007; Martiré & Rochat, 2008). Because the two species are currently considered valid and are currently placed in genera in different families and occur in different geographical regions and because they cannot be easily confused and will not be considered as congeneric in future, nomenclatural stability would be best promoted by conserving their present usages. For the satyrine butterfly, rather than using the next available synonym at species level (b, para 4) and proposing a new name for the population from Mauritius, it appears less complicated to us to follow the course of action suggested below.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *narcissus* Fabricius, 1798, published in the binomen *Papilio narcissus*, is not invalid by reason of being a junior primary homonym of *Papilio narcissus* Fabricius, 1775;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *narcissus* Fabricius, 1775, as published in the binomen *Papilio narcissus*;
 - (b) *narcissus* Fabricius, 1798, as published in the binomen *Papilio narcissus*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *narcissus* Fabricius, 1775, as published in the binomen *Papilio narcissus*, as ruled in (1) above.

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References

- Ackery, P.R., Smith, C.R. & Vane-Wright, R.I. 1995. *Carcasson's African butterflies. An Annotated Catalogue of the Papilionoidea and Hesperioidea of the Afrotropical Region*. 803 pp. CSIRO Publications, Melbourne.
- Aurivillius, [P.O.]C. 1899. Rhopalocera Aethiopica. Die Tagfalter des aethiopischen Faunengebietes. Eine Systematisch-Geographische Studie. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, **31**(5): 1–561. [Publication date from a statement on p. 561 in that work].
- Boisduval, J.B.A. 1833. Mémoire sur les lépidoptères de Madagascar, Bourbon et Maurice. *Nouvelles Annales du Muséum d'Histoire Naturelle* (Paris), (3)**2**(2): 149–270, 7 pls. [Publication date from Sherborn, 1914].
- Braby, M.F. 2000. *Butterflies of Australia. Their identification, biology and distribution*, **2**, 976 pp. CSIRO Publishing, Collingwood, Australia.
- Butler, A.G. 1868a. Remarks on the Fabrician species of the satyride genus *Mycalesis*; with descriptions, and notes on the named varieties. *Proceedings of the Zoological Society of London*, **1867**(3): 718–721.

- Butler, A.G.** 1868b. *Catalogue of diurnal Lepidoptera of the family Satyridae in the collection of the British Museum*. 211 pp., 5 pls. Taylor and Francis, London.
- Butler, A.G.** [1870]. *Catalogue of diurnal Lepidoptera described by Fabricius in the collection of the British Museum*. 303 pp., 3 pls. Taylor & Francis, London. [Publication date from Sherborn, 1934].
- Desegaulx de Nolet, A.** 1982. Entomofaune des îles de l'Océan Indien zone sud-ouest: Lepidoptères: Rhopalocères, Arctiidae, Sphingidae. *Info-Nature, Île de la Réunion*, **19**: 15–117.
- Doubleday, E.** 1848. *List of the specimens of lepidopterous insects in the collection of the British Museum*, Appendix: [ii], 37 pp. Spottiswoode & Shaw, London [the name appeared in the Appendix published on [5 August] 1848].
- Druce, H.H.** 1891. A monograph of the lycaenid genus *Hypochrysops*, with descriptions of new species. *Transactions of the Entomological Society of London*, **1891**(2): 179–195.
- Edwards, E.D., Newland, J. & Regan, L.** 2001. *Zoological catalogue of Australia*. 31.6. *Lepidoptera Hesperioidea, Papilionoidea*. 615 pp. Csiro Publishing, Melbourne.
- Fabricius, J.C.** 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi & Lipsiae.
- Fabricius, J.C.** 1793. *Entomologia systematica*, vol. 3(1). [6], 487 pp. Hafniae.
- Fabricius, J.C.** 1798. *Supplementum entomologiae systematicae*. 572 pp. Proft & Storch, Hafniae.
- Godart, J.B.** [1824]. Pp. 329–828 in Latreille, P.A. & Godart, J.B. (1819–[1824]), *Encyclopédie Méthodique. Histoire naturelle. Entomologie, ou histoire naturelle des crustacés, des arachnides et des insects*, **9**(2). Veuve Agasse, Paris. [Publication date from Passos, 1958].
- Guillermet, C.** 2004. Contribution à l'étude de l'entomofaune de l'île de la Réunion (Lepidoptera, Heterocera et Coleoptera). *Nouvelle Revue d'Entomologie*, (N.S.) **20**(4): 373–389.
- Hemming, F.** 1941. The dates of publication of the specific names first published in Doubleday, (E.) *Genera of diurnal Lepidoptera*, and in the continuation thereof by Westwood, (J.O.). *Journal of the Society for the Bibliography of Natural History*, **1** (11): 447–464.
- Hübner, J.** [1819]. *Verzeichniss bekannter Schmetterlinge (Anzeiger, &c.)*. 1816–[1827]. 431 pp. Augsburg (Publication date is after ICZN Opinion 150; Opinions and Declarations, **2**: 161–168, December 1843).
- Kodandaramaiah, U., Lees, D.C., Müller, C.J., Torres, E., Karanth, C.P. & Wahlberg, N.** 2010. Phylogenetics and biogeography of a spectacular Old World radiation of butterflies: the subtribe Mycalesina (Lepidoptera: Nymphalidae: Satyrini). *BMC Evolutionary Biology*, **10**: 172, doi:10.1186/1471-2148-10-172.
- Kristensen, N.P. & Karsholt, O.** 2008a. *Zoological Museum Copenhagen: Fabricius Types Order Lepidoptera (author Fabricius 1775–1787)*. <http://www.zmuc.dk/entoweb/collections-databaser/lepidoptera/lepidoptera%20fabricius1775-87.htm>. Accessed October 22, 2012.
- Kristensen, N.P. & Karsholt, O.** 2008b. *Zoological Museum Copenhagen: Fabricius Types Order Lepidoptera (author Fabricius 1793–1807)*. <http://www.zmuc.dk/entoweb/collections-databaser/lepidoptera/lepidoptera%20fabricius1775-87.htm>. Accessed October 22, 2012.
- Lamas, G.** 2010. Nomenclatural notes on Satyrinae (Lepidoptera: Nymphalidae). *SHILAP Revista de Lepidopterologia*, **38**(150): 197–204.
- Lamas, G. & Mallet, J.L.B.** 2005. *Papilio sapho* Drury, 1782 (currently *Heliconius sapho*; Insecta, Lepidoptera): proposed conservation of the specific name. *Bulletin of Zoological Nomenclature*, **62**(1): 21–24.
- Lees, D.C.** 1997. *Systematics and biogeography of Madagascan mycalesine butterflies (Lepidoptera: Satyrinae)*. 411 pp. Unpublished PhD thesis, University of London.
- Lees, D.C., Kremen, C. & Raharitsimba, T.** 2003. Classification, diversity and endemism of the butterflies (Papilionoidea and Hesperioidea): A revised species checklist. Pp. 762–793 (most pages unnumbered) in Goodman, S.M. and Benstead, J. P. (Eds.), *The Natural history of Madagascar*. 1709 pp. University of Chicago Press, Chicago & London.
- Manders, N.** 1908. The butterflies of Mauritius and Bourbon. *Transactions of the Entomological Society of London*, **1907**(4): 429–454.

- Martiré, D. & Rochat, J.** 2008. *Les papillons de la Réunion et leurs chenilles*. 496 pp. Biotope, Mèze.
- Oberthür, C.** 1916. Observations sur une centurie d'espèces de Lépidoptères Rhopalocères malgaches. *Études de Lépidoptérologie Comparée*, **11**: 177–244, pls. 365–369.
- Parsons, M.J.** [1998]. *The butterflies of Papua New Guinea. Their systematics and biology*. 736 pp. Academic Press, London & New York.
- Passos, C.F. dos.** 1958. The dates and authorships of the names proposed in volume 9 of Encyclopédie méthodique by Godart and Latreille, 1819–[1824]. *Lepidopterists' News*, **12**(3–4): 119–120.
- Roos, P.H.** 2003. Morphological characters of the immature stages of *Henotesia narcissus* (Fabricius, 1798): description and phylogenetic significance (Lepidoptera: Nymphalidae, Satyrinae, Satyrini, Mycalesina). *Nachrichten des Entomologischen Vereins Apollo*, **23**(4): 225–236.
- Saalmüller, M.** 1884. *Lepidopteren von Madagascar. Neue und wenig bekannte Arten zumeist aus der Sammlung der Senckenberg'schen naturforschenden Gesellschaft zu Frankfurt am Main unter Berücksichtigung der gesamten Lepidopteren-Fauna Madagascars*. 531 pp. Senckenberg'sche naturforschende Gesellschaft, Frankfurt am Main.
- Sands, D.P.A.** 1986. A revision of the genus *Hypochrysops* C. & R. Felder (Lepidoptera: Lycaenidae). *Entomonograph*, **7**: 1–116.
- Sherborn, C.D.** 1914. An attempt at a fixation of the dates of issue of the parts of the publications of the Musée d'Histoire Naturelle of Paris, 1800–1850. *Annals and Magazine of Natural History*, (8)**13**(75): 365–368.
- Sherborn, C.D.** 1934. Dates of publication of catalogues of natural history post 1850 issued by the British Museum. *Annals and Magazine of Natural History*, (10)**13**(74): 308–312.
- Trimen, R.** 1866. Notes on the butterflies of Mauritius. *Transactions of the Entomological Society of London*, (3)**5**(4): 329–344.
- Turlin, B.** 1994. Faune lépidoptérologique de l'Archipel des Comores (Océan Indien). (Rhopalocères, Sphingides, Attacidae) (4). *Lambillionea*, **94**(3)(2): 372–388.
- Vinson, J.** 1938. Catalogue of the Lepidoptera of the Mascarene Islands. *Mauritius Institute Bulletin*, **1**(4): 1–69.
- Westwood, J.O.** [1850]. Pp. 252–534 in Doubleday, E. & Westwood, J.O. (1846–52). *The genera of diurnal Lepidoptera*, 2: [ii]. London. [Publication date from Hemming, 1941].
- Williams, J.R.** 2007. *Butterflies of Mauritius*. 48 pp. Bioculture Press, Rivière des Anguilles, Mauritius.
- Williams, M.C.** 2007. *Afrotropical butterflies and skippers*. <http://www.atbutterflies.com/index.htm>. Digital format encyclopaedia. Accessed 22/10/2012.
- Zimsen, E.** 1964. *The type material of I.C. Fabricius*. 656 pp. Munksgaard, Copenhagen.

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Case 3607

***Haltica (Dibolia) schillingii* Letzner, 1847 (Insecta, Coleoptera, CHRYSOMELIDAE): proposed precedence over flea-beetle *Petalopus metallicus* Motschulsky, 1845 (currently *Dibolia metallica*)**

Manfred Döberl

Seeweg 34, 93326 Abensberg, Germany (e-mail: mdcol@t-online.de)

Ivan Löbl

Muséum d'histoire naturelle, route de Malagnou 1, CH-1208 Geneva, Switzerland (e-mail: ivan.lobl@bluewin.ch)

Abstract. The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the name *Dibolia schillingii* (Letzner, 1847), for a flea-beetle species (CHRYSOMELIDAE, ALTICINAE OR GALERUCINAE, ALTICINI) widespread in western Palaearctic, by giving it precedence over the unused older name *Dibolia metallica* (Motschulsky, 1845), whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; *Coleoptera*; CHRYSOMELIDAE; *Dibolia*; flea-beetle; Palaearctic.

1. In 1845 (p. 107) Victor de Motschulsky published descriptions of several Caucasian ALTICINI, including a new genus, *Petalopus*, based on a new species, *Petalopus metallicus*. *P. metallicus* was characterised by the strongly widened basal segment of the protarsi. Motschulsky, 1845 compared this species with *Dibolia cynoglossi* (Koch, 1803). Its type material is preserved in the Zoological Museum of the Moscow Lomonosov State University, Russia. *Petalopus metallicus* Motschulsky, listed as ‘?metallica Motsch.,’ was obviously considered a doubtful synonym of ‘*Dibolia Schillingii* Letzn. 1846’ in the main source of taxonomic information for ALTICINI, the *Coleopterorum Catalogus* pars 169 (Heikertinger, 1940, p. 493. The catalogue gives under *metallica* three additional citations: ‘Ws. Naturgesch. Ins. Deutschl. Col. VI, 1893, p. 1030. - ?Jacobson, Öft. Finsk. Vörrh. XLIII, 1900–1901, p.145 (As. ross.). Ogloblin, Eos VI, 1930, p. 110’. The characters given by Weise (1893) in his treatment of *D. metallica* indicate obvious misidentification, probably referring to *Dibolia tricolor* Reitter, 1898. To which species the citations of Jacobson, 1900–1901 refer remains unknown. Ogloblin (1930) examined the type material of *Petalopus metallicus* Motschulsky and stated it was conspecific with *Dibolia schillingii* Letzner. He published the new synonymy in a paper dealing with Oriental ALTICINI present in the collection of V. Motschulsky. This is possibly the reason why it was overlooked by most subsequent European workers. The name *Dibolia metallica* (Motschulsky) was used as valid only five times since 1900, by Medvedev & Shapiro, 1965; Shapiro, 1969; Medvedev, 2006; Bienkowski 1999, 2004. A study of the respective type material by the senior author confirmed the synonymy of *D. schillingii* and *D. metallica*.

2. In 1847 Karl Letzner published the description of a new species, *Haltica* (*Dibolia*) *schillingii*. It was compared to *Dibolia cynoglossi* as was Motschulsky's *P. metallicus*. Letzner named the new species in honour of his friend Peter S. Schilling. The type material of *schillingii* is deposited in the Deutsches Entomologisches Institut, Müncheberg, Germany. Heikertinger (1940) gave 24 references for *Dibolia schillingii* in the *Coleopterorum Catalogus* pars 169. Khnzorian-Iablokoff (1968) based a new subgenus of *Dibolia*, *Eudibolia* on this species. The two recognized junior synonyms, *Dibolia punctillata* Foudras, 1860 and *D. schillingii* var. *ciliciensis* Heikertinger, 1911 were associated with *D. schillingii*, and not with *D. metallica*.

3. Mohr (1981) provided a revision of the Palaearctic species of *Dibolia*, and commented (p. 410) [translation from German]: 'Ogloblin, 1930, could study the type of *Petalopus metallicus* Motschulsky, 1845 that is housed in the Zoological Museum of Moscow University. He stated the synonymy of *P. metallicus* and *D. schillingii*. For priority reasons the species should be named *D. metallica*, but *D. schillingii* [sic] has been exclusively in use for more than 100 years, therefore I retain it.'

4. *Dibolia schillingii* (Letzner, 1847) (formerly *Haltica*) is a well-known species widely distributed from western Europe to Kazakhstan, associated with *Salvia pratensis*, *S. nemorosa*, and *S. verticillata*. The name *schillingii* was often incorrectly spelled with one 'i'. The name is currently in use in papers on taxonomy, distribution, and biology of flea-beetles. Recent works using this name and its author in the last 50 years are: Biondi, 1990; Biondi et al., 1995; Böhme, 2001; Brelih et al., 2003; Borowiec, 1983; Burakowski et al. 1991; Čížek, 2006; Čížek & Doguet, 2008; Derenne, 1963; Döberl, 2010; Doguet, 1994; Gruev, 1988, 1990, 1992, 1998, 2003a, 2003b, 2003c, 2003d; Gruev & Döberl, 1997, 2005; Gruev & Tomov, 1986, 1998, 2007; Gruev et al. 1993, 1994; Kaszab, 1962a, 1962b; Khnzorian-Iablokoff, 1968, 1983; Konnerth-Ionescu, 1963; Konstantinov & Vandenberg, 1996; Lopatin, 1977, 1984; Lopatin & Kulenova, 1986; Medvedev, 2006; Mohr, 1966; 1969, 1981; Negru & Rosca, 1967; Rozner, 1990; Strejček, 1993; Vig, 1996; Warchałowski, 1974, 1976, 1978, 1998, 2010. Because of the five publications using the senior name (cited under para. 1), the junior name cannot be maintained under Article 23.9.1.1 of the Code (1999), despite being in prevailing usage. Therefore the case is referred to the Commission under Article 23.9.3 of the Code.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *schillingii* Letzner, 1847, as published in the binomen *Haltica schillingii*, precedence over the name *metallica* Motschulsky, 1845, as published in the binomen *Petalopus metallicus*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific names in Zoology the following names:
 - (a) *schillingii* Letzner, 1847, as published in the binomen *Haltica schillingii*, with the endorsement that it is to be given precedence over the name *metallicus* Motschulsky, 1845, as published in the binomen *Petalopus metallicus*, whenever the two are considered to be synonyms;
 - (b) *metallicus* Motschulsky, 1845, as published in the binomen *Petalopus metallicus*, with the endorsement that it is not to be given priority over the name *schillingii* Letzner, 1847, as published in the binomen *Haltica schillingii*, whenever the two are considered to be synonyms.

References

- Bienkowski, A.O. 1999. *Guide to the identification of leaf-beetles (Coleoptera Chrysomelidae) of the Eastern Europe*. 204 pp. Moscow.
- Bienkowski, A.O. 2004. *Leaf-Beetles (Coleoptera: Chrysomelidae) of the Eastern Europe. New key to subfamilies, genera and species*. 278 pp. Micro Print, Moscow.
- Biondi, M. 1990. Elenco commentato dei Crisomelidi Alticini della fauna italiana. *Fragmenta Entomologica*, Roma, **22**: 109–183.
- Biondi, M., Daccordi, M., Regalin, R. & Zampetti, M. 1995. Coleoptera Polyphaga XV (Chrysomelidae, Bruchidae). In Minelli, A., Ruffo, S. & La Posta, S. (Eds.), *Checklist delle specie della fauna italiana*. 68 pp. Calderini, Bologna.
- Böhme, J. 2001. *Phytophage Käfer und ihre Wirtspflanzen in Mitteleuropa*. 132 pp. Heroldsberg.
- Borowiec, L. 1983. Die Blattkäfer xerothermer Standorte im südlichen Polen. Pp. 83–84 in: *Verh. X. SIEEC Budapest 1983*. Budapest.
- Brelih, S., Döberl, M., Drovenik, B. & Pirnat, A. 2003. Materialien zur Käferfauna (Coleoptera) Slowenien. 1. Beitrag: Polyphaga: Chrysomeloidea (Phytophaga): Chrysomelidae: Alticinae. *Scoplia*, **50**: 1–279.
- Burakowski, B., Mroczkowski, M. & Stefanska, J. 1991. Stonkowate – Chrysomelidae, pt. 2. *Katalog fauny Polski, Warszawa, pt. XXIII, Chrząszcze Coleoptera*, 17, 227 pp. Państwowe Wydawnictwo Naukowe, Warszawa.
- Čížek, P. 2006. [Die Flohkäfer der Tschechischen Republik und der Slowakei (Coleoptera: Chrysomelidae: Alticinae)] 76 pp. Městské muzeum, Nové Město nad Metují.
- Čížek, P. & Doguet, S. 2008. *Klíč k určování dřepčků (Coleoptera: Chrysomelidae: Alticinae) Česka a Slovenska*. 232 pp. Městské Muzeum, Praha.
- Doguet, S. 1994. Alticinae. In: *Coléoptères Chrysomelidae*, vol. 2 (*Faune de France*, vol. 80). ix, 694 pp. Fédération Française des Sociétés de Sciences Naturelles, Paris
- Döberl, M. 2010. Alticinae. Pp. 491–563 in Löbl, I. & Smetana, A. (Eds.), *Catalogue of Palaearctic Coleoptera Vol. 6, Chrysomeloidea*. 924 pp. Apollo Books, Stenstrup.
- Doguet, S. 1994. Coléoptères Chrysomelidae Volume 2 Alticinae. *Faune de France*, **80**: 1–694.
- Foudras, A.C.M.E. 1860. Altisides (Opus posthumus) in Mulsant (Ed.), *Histoire naturelle des Coléoptères de France. Annales de la Société Linnéenne de Lyon (N. S.)*, **6–7** [1859], 1–384.
- Gruev, B. 1988. Check-list and zoogeography of the species of Alticinae (Coleoptera, Chrysomelidae) in the Bulgarian Black Sea side. *Travaux Scientifiques. Plovdiv*, **26**(6 – Biologie): 79–134.
- Gruev, B. 1990. The geographic distribution of Lamprosomatinae, Eumolpinae, Chrysomelinae, Alticinae, Hispinae and Cassidinae in Greece (Coleoptera, Chrysomelidae). *Deutsche Entomologische Zeitschrift, N. F.*, **37**: 289–359.
- Gruev, B. 1992. *Geographical distribution of the leaf beetle subfamilies Lamprosomatinae, Eumolpinae, Chrysomelinae, Alticinae, Hispinae and Cassidinae on the Balkan Peninsula*. 512 pp. Plovdiv University Press, Bulgaria.
- Gruev, B. 1998. *Checklist of Eumolpinae, Chrysomelinae, Alticinae, Hispinae and Casidinae in Republic of Macedonia*. 60 pp. Sofia.
- Gruev, B. 2003a. The European endemics of Alticinae (Col: Chrysomelidae). *Travaux Scientifiques, Plovdiv (Biology, Animalia)*, **39**(6): 5–18.
- Gruev, B. 2003b. A comparative study on the fauna of Alticinae (Coleoptera, Chrysomelidae) in the Asian part of Turkey and the adjacent countries Georgia, Armenia, Iran, Iraq and Syria. *Travaux Scientifiques, Plovdiv (Biology, Animalia)*, **39**(6): 19–40.
- Gruev, B. 2003c. The leaf beetles (Coleoptera: Chrysomelidae) of Sakar Mountain (South-east Bulgaria). *Travaux Scientifiques, Plovdiv (Biology, Animalia)*, **39**(6): 41–53.
- Gruev, B. 2003d. The leaf beetles (Coleoptera: Chrysomelidae) of Strandzha Mountain (Southeastern Bulgaria). Fauna and zoogeography. *Travaux Scientifiques, Plovdiv (Biology, Animalia)*, **39** (6): 55–74.
- Gruev, B. & Döberl, M. 1997. General distribution of the flea beetles in the Palaearctic subregion (Coleoptera, Chrysomelidae: Alticinae). *Scoplia*, **37**: 1–496.

- Gruev, B. & Döberl, M. 2005. *General distribution of the flea beetles in the Palaearctic subregion (Coleoptera, Chrysomelidae: Alticinae). Supplement*. 239 pp. Pensoft, Sofia.
- Gruev, B., Merkl, O. & Vig, K. 1993. Geographical distribution of Alticinae in Rumania. *Annales Historico-Naturales Musei Nationalis Hungarici*, **85**: 75–132.
- Gruev, B., Özbek, H. & Arslan, I. 1994. Leaf-beetles (Coleoptera, Chrysomelidae) new to the fauna of Turkey. *Türkiye Entomologiji Dergisi*, **18**: 193–196.
- Gruev, B. & Tomov, V. 2007. A distributional atlas and catalogue of the leaf beetles of Bulgaria (Coleoptera: Chrysomelidae). *Zoographia Bulgarica*, vol. 3. 350 pp. Pensoft, Sofia-Moscow.
- Gruev, B. & Tomov, V. 1986. *Fauna na Bulgariya 16. Coleoptera, Chrysomelidae part II: Chrysomelinae, Galerucinae, Alticinae, Hispinae, Cassidinae*. 388 pp. Sofia.
- Gruev, B. & Tomov, V. 1998. *Catalogus Faunae Bulgaricae. 3 Coleoptera, Chrysomelidae*. 160 pp. Sofia.
- Heikertinger, F. 1911. Beobachtungen über geographische Einflüsse auf Form und Färbung bei Halticinen. I. Kleinasiatische Dibolia-Arten. *Deutsche Entomologische Nationalbibliothek*, **2**: 118–120.
- Heikertinger, F. 1940. In Heikertinger F. & Csiki E., Chrysomelidae: Halticinae. Pp. 337–635 pp. In Junk, W. & Schenkling, S. (Eds.), *Coleopterorum Catalogus Pars 169*, s'Gravenhage, the Netherlands.
- Kaszab, Z. 1962a. Beiträge zur Kenntnis der Chrysomeliden-Fauna des Karpatenbeckens nebst Beschreibung neuer Formen (Coleoptera). *Rovartani Közlemények (S. N.)*, **15**: 25–93.
- Kaszab, Z. 1962b. Levélbogarak Chrysomelidae. In: *Magyarország állatvilága. 9. kötet, Coleoptera 4. 6 füzet (Fauna Hungariae, vol. 63)*. 416, 17 pp. Akadémiai Kiado, Budapest.
- Khnzorian-Iablokoff, S.M. 1968. Notes sur les Chrysomelidae de l'Arménie Soviétique (Col.). *Annales de la Société Entomologique de France (N. S.)*, **4**: 259–277.
- Khnzorian-Iablokoff, S.M. 1983. Bemerkungen über Dibolia-Arten (Coleoptera, Chrysomelidae). *Entomologische Blätter*, **79**: 30–32.
- Konnerth-Ionescu, N. 1963. Halticinae recorded from Rumania till 1961. *Travaux du Muséum d'Histoire Naturelle 'Grigore Antipa'*, **4**: 251–267.
- Konstantinov, A. & Vandenberg, N. 1996. Handbook of Palearctic Flea Beetles (Coleoptera: Chrysomelidae: Alticinae). *Contributions on Entomology, International*, **1**(3): 233–439.
- Letzner, K. 1847. 2. Bericht über die Beschäftigungen der entomologischen Section im Jahre 1846. *Uebersicht der Arbeiten und Veränderungen der Schlesischen Gesellschaft für vaterländische Kultur*, **1847**: 73–85.
- Lopatin, I.K. 1977. [Leaf-beetles (Chrysomelidae) of Central Asia and Kazakhstan]. 268 pp. Leningrad.
- Lopatin, I.K. 1984. *Leaf-beetles (Chrysomelidae) of Central Asia and Kazakhstan*. 416 pp. Leningrad.
- Lopatin, I.K. & Kulenova, K.Z. 1986. *Zhuki-listoedy (Coleoptera, Chrysomelidae) Kazakhstan: opredelitel*. 200 pp. Alma-Ata, Nauka.
- Medvedev, L.N. 2006. To the knowledge of Chrysomelidae (Coleoptera) described by V. Motschulsky. *Russian Entomological Journal*, **15**: 409–417.
- Medvedev, L.N. & Shapiro D.S. 1965. Chrysomelidae. Pp. 419–474 in Bey-Bienko, G. (Ed.), *Keys of insects in European part of USSR*. Akademiya Nauk SSSR. Moskva - Leningrad.
- Mohr, K.-H. 1966. 88. Familie: Chrysomelidae. Pp. 95–280 in Freude, H., Harde, K.W. & Lohse, G.A. (Eds.), *Die Käfer Mitteleuropas Band 9 Cerambycidae Chrysomelidae*. 299 pp. Goecke & Evers, Krefeld.
- Mohr, K.-H. 1969. Beitrag zur Chrysomelidenfauna Bulgariens. *Beiträge zur Entomologie*, **19**: 389–394.
- Mohr, K.-H. 1981. Revision der paläarktischen Arten der Gattung *Dibolia* Latreille, 1829 (Coleoptera, Chrysomelidae, Halticinae). *Polskie Pismo Entomologiczne*, **51**: 393–469.
- Motschulsky, V. 1845. Remarques sur la collection de Coléoptères russes de M. Article I. *Bulletin de la Société Impériale des Naturalistes de Moscou*, **18**(1): 1–127, 3 pls.
- Negru, S. & Rosca, A. 1967. L'entomofaune des forêts du sud de la Dobroudja. Coleoptera. *Travaux du Muséum d'Histoire Naturelle 'Grigore Antipa'*, **7**: 119–145.

- Ogloblin, D.A.** 1930. De quelques espèces de Halticinae (Col. Chrysomelidae) de la collection de V. Motschoulsky. *Eos, Revista Espanola de Entomologica*, **6**: 83–112.
- Rozner, I.** 1990. Data to the knowledge of the leafbeetles-fauna of the Bakony Mountains IV. 1968–1988. *Folia Musei Historia Naturalis Bakonyensis*, **9**: 35–70.
- Shapiro, D.** 1969. A review of the flea beetles (Coleoptera; Chrysomelidae, Halticinae) of Dagestan and neighboring regions of the Caspian lowland. *Entomological Review*, **48**: 162–167.
- Strejček, J.** 1993. Chrysomelidae. Pp. 123–132 in Jelínek, J., Check-list of Czechoslovak Insects IV (Coleoptera). *Folia Heyrovskyana Supplementum*, **1**: 1–172.
- Vig, K.** 1996. A Nyugat-Magyarországi-Peremvidék Levélbogár Faunájának Alapvetése. Leaf beetle fauna of western Transdanubia (Hungary) (Coleoptera: Chrysomelidae sensu lato). *Praenorica, Folia Historica Naturalia*, **3**: 3–178.
- Warchałowski, A.** 1974. Übersicht der Blattkäfer Bulgariens (Coleoptera, Chrysomelidae). *Polskie Pismo Entomologiczne*, **44**: 473–542.
- Warchałowski, A.** 1976. Biogeographische Studien über die Blattkäfer der Pontischen Provinz (Coleoptera, Chrysomelidae). *Polskie Pismo Entomologiczne*, **46**: 29–94.
- Warchałowski, A.** 1978. *Chrysomelidae: Halticinae, Hispinae i Cassidinae*. In: *Klucze do oznaczania owadów polski*. 157 pp. Polskie Towarzystwo Entomologiczne, Warszawa-Wrocław.
- Warchałowski, A.** 1998. Chrysomelidae. Stonkowate (Insecta: Coleoptera) Czesc. 6. (Podrodzina: Halticinae: Hermaeophaga – Dibolia). *Fauna Polski*, **20**: 1–292.
- Warchałowski, A.** 2010. *The Palaearctic Chrysomelidae*, vol. 2. 629–1212 pp., 102 pls. Warszawa.
- Weise, J.** 1893. Chrysomelidae. Lieferung 6. Pp. 961–1161 in: *Naturgeschichte der Insecten Deutschland. Erste Abtheilung Coleoptera. Sechster Band* [1893]. xiv, 1161 pp., 1 pl. Nicolaische Verlags-Buchhandlung R. Stricker, Berlin.

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Case 3602***Coenosia* Meigen, 1826 and COENOSIINAE Verrall, 1888 (Insecta, Diptera, MUSCIDAE): proposed conservation of usage of the genus-group and family-group names**

Neal L. Evenhuis

*J. Linsley Gressitt Center for Research in Entomology, Bishop Museum,
1525 Bernice Street, Honolulu, Hawaii 96817–2704, U.S.A.
(e-mail: NealE@bishopmuseum.org)*

Adrian C. Pont

*Oxford University Museum of Natural History, Parks Road, Oxford
OX1 3PW, U.K. (e-mail: pont.muscidae@btinternet.com)*

Abstract. The purpose of this application, under Articles 70.2 and 23.9.3 of the Code, is to conserve the current usage of the generic name *Coenosia* Meigen, 1826, for a well-established genus of muscid flies. The type species of *Coenosia* has long been assumed to be *Musca tigrina* Fabricius, 1775. However, the correct type species is *Musca fungorum* De Geer, 1776, which is currently recognized as a valid species of *Mycophaga* Rondani, 1856, a genus of anthomyiid flies. Acceptance of *Musca fungorum* De Geer, 1776 as the type species of *Coenosia* would change the current concept of that genus to that of the anthomyiid *Mycophaga*, and the current muscid generic name *Coenosia* would become *Caricea* Robineau-Desvoidy, 1830 as the next available name. To avoid the nomenclatural instability that would result from following the Principle of Priority, it is proposed that all type fixations for *Coenosia* Meigen, 1826 prior to that of *Musca tigrina* Fabricius, 1775 by Westwood (1840) be set aside. In addition, it was noted that, because the genus-group names *Coenosia* Meigen, 1826 and *Limosia* Robineau-Desvoidy, 1830 have long been considered subjective synonyms of each other and are the type genera for respective family-group names, if the Principle of Priority were followed, the family-group name LIMOSIINAE Robineau-Desvoidy, 1830 would become the senior synonym of COENOSIINAE Verrall, 1888. To avoid the potential instability resulting from acceptance of the relative priority of these two family-group names, it is proposed that precedence be given to COENOSIINAE over LIMOSIINAE whenever the two are placed in the same family group.

Keywords. Nomenclature; taxonomy; Diptera; MUSCIDAE; *Coenosia*; *Musca tigrina*; *Musca fungorum*; *Mycophaga*; COENOSIINAE; LIMOSIINAE; muscid flies; cosmopolitan.

1. Meigen (1826, p. 210) proposed the generic name *Coenosia* for 28 new species: *Musca fungorum* De Geer, 1776, *Musca tigrina* Fabricius, 1775 (with *Musca quadrum* Fabricius, 1805 in synonymy), *Coenosia nemoralis* Meigen, 1826, *Musca rufina* Fallén, 1825, *Coenosia sexnotata* Meigen, 1826, *Musca verna* Fabricius, 1794, *Musca intermedia* Fallén, 1825, *Coenosia murina* Meigen, 1826, *Coenosia nigrimana* Meigen,

1826, *Coenosia means* Meigen, 1826, *Musca pedella* Fallén, 1825, *Coenosia nigra* Meigen, 1826, *Coenosia ambulans* Meigen, 1826, *Coenosia minima* Meigen, 1826, *Coenosia punctum* Meigen, 1826, *Coenosia albipalpis* Meigen, 1826, *Coenosia decipiens* Meigen, 1826 (as ‘*Coen. decipiens*. Wied.’), *Coenosia perpusilla* Meigen, 1826, *Musca meditata* Fallén, 1825, *Musca geniculata* Fallén, 1825, *Coenosia albicornis* Meigen, 1826, *Coenosia punctipes* Meigen, 1826, *Coenosia humilis* Meigen, 1826, *Coenosia simplex* Meigen, 1826, *Musca pumila* Fallén, 1825, *Coenosia rufipalpis* Meigen, 1826, *Coenosia monilis* Meigen, 1826, and *Musca myopina* Fallén, 1825. A type species was not designated.

2. Drapiez (1837, p. 532) designated *Musca fungorum* De Geer, 1776 as the type species of *Coenosia*. This designation has been overlooked by subsequent authors and is the earliest subsequent designation of an originally included species.

3. Westwood (1840, p. 143) designated *Musca tigrina* Fabricius, 1775 (p. 779) as the type species of *Coenosia* (as ‘*Caenosia*’). The universally accepted concept of *Coenosia* is based on this type species designation. The type species designations in Westwood’s *Synopsis of the genera of British insects* were accepted as valid in Opinion 71 (I.C.Z.N., 1922, p. 16). Westwood (1840, p. 143) also listed *Musca tigrina* as included in *Caricea* Robineau-Desvoidy, 1830; this does not constitute a valid type designation (*M. tigrina* was not an originally included species in *Caricea*), but it could be interpreted as a synonymization of *Caricea* with *Coenosia*.

4. Robineau-Desvoidy (1830, p. 528) proposed the family-group name LIMOSELLAE (stem corrected to LIMOSI-) based on the type genus *Limosia* Robineau-Desvoidy, 1830. An earlier proposal of ‘LIMOSELLAE’ by Robineau-Desvoidy in Blainville (1826, p. 12) occurred in a work that was suppressed by the Commission in Opinion 1601 (BZN 47: 162; June 1990).

5. Verrall (1888, p. 24) proposed the family-group name COENOSINAE (stem corrected to COENOSI-) based on the type genus *Coenosia* Meigen, 1826.

6. *Coenosia* Meigen, 1826 is a widespread genus of MUSCIDAE Latreille, 1802 occurring in all world zoogeographic realms. It is the type genus of the family-group taxon COENOSIINAE Verrall, 1888 (p. 24) (Sabrosky, 1999), and, according to different estimates, contains some 560 to 680 species-group names (Bisby et al., 2011; Pape & Thompson, 2010). Recent catalogues of Diptera record *Coenosia* as a taxonomically valid genus occurring in the Nearctic (e.g. Hockett, 1965; Poole, 1996), Neotropical (e.g. Carvalho et al., 2005), Oriental (e.g. Pont, 1977), Afrotropical (e.g. Pont, 1980), Australasian/Oceanian (e.g. Pont, 1989), and Palearctic (e.g. Pont, 1986) regions.

7. In researching subsequent type-species designations of Diptera genus-group names, an earlier designation was found for *Coenosia* by Drapiez (1837), who designated *Musca fungorum* De Geer, 1776, the first of the 28 originally included species. Nomenclatural instability would result from the adoption of *Musca fungorum* as the type species of *Coenosia* as designated by Drapiez (1837). *Musca fungorum* is currently treated (as a senior, but invalid synonym [preoccupied by *Musca fungorum* Scopoli, 1763] of *Coenosia testacea* Gimmerthal, 1834) in the genus *Mycophaga* Rondani, 1856 in the ANTHOMYIIDAE Latreille, 1829 (e.g. Dely-Draskovits, 1993). Acceptance of *M. fungorum* as the type species of *Coenosia* would result in the subjective synonymy of *Coenosia* and *Mycophaga*, with *Coenosia* having priority. The genus currently known as *Mycophaga* would take the name *Coenosia* (with *Mycophaga* in subjective synonymy). The genus currently known as *Coenosia*

would become *Caricea* Robineau-Desvoidy, 1830 (the next available name currently in synonymy with *Coenosia*).

8. Research conducted in the preparation of this case revealed that, because the genus-group names *Coenosia* Meigen, 1826 and *Limosia* Robineau-Desvoidy, 1830 have long been considered subjective synonyms of each other (e.g. Macquart, 1835; Stein in Bezzi & Stein, 1907; Hennig, 1961) and are the type genera for respective family-group taxa, if the Principle of Priority were followed, the family-group name LIMOSIINAE Robineau-Desvoidy, 1830 (stem spelling corrected from original proposed as 'LIMOSELLAE') would become the senior synonym of COENOSIINAE Verrall, 1888 (originally proposed as 'COENOSINAE'). Acceptance of the relative priority of these two family-group names would upset the stability of nomenclature and taxonomy of the long-established name COENOSIINAE by replacing it with the lesser-known LIMOSIINAE. Unfortunately, LIMOSIINAE cannot be dealt with by Article 23.9.1 because the name was treated as a name for a valid taxon after 1899 when Sabrosky (1999, p. 95) stated that LIMOSELLAE Robineau-Desvoidy, 1830 has priority over COENOSINAE Verrall, 1888 and (p. 178) treated it as a valid name. Aside from the treatment of LIMOSELLAE as valid in Sabrosky (1999), no family-group name proposed by Robineau-Desvoidy (1830) based on *Limosia* Robineau-Desvoidy, 1830 has been used as a name for a valid taxon since Lioy (1864). In contrast, COENOSIINAE has been in wide use as a name for a valid taxon in more than 25 works by 10 different authors in the last 50 years, including the major catalogue references listed in (6) above. A full list of these works is kept with the Commission Secretariat. A pragmatic solution to the problem of priority of these two names would be to give precedence to COENOSIINAE over LIMOSIINAE whenever the two are placed in the same family group.

9. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to set aside all type species fixations for the nominal genus *Coenosia* Meigen, 1826 before that of *Musca tigrina* Fabricius, 1775 by Westwood (1840);

(b) to give precedence to the family-group name COENOSIINAE Verrall, 1888 over LIMOSELLINAE Robineau-Desvoidy, 1830 whenever the two are placed in synonymy in the same family group;

(2) to place on the Official List of Generic Names in Zoology the name *Coenosia* Meigen, 1826 (gender: feminine), type species *Musca tigrina* Fabricius, 1775 by subsequent designation by Westwood (1840) as ruled in (1) above;

(3) to place on the Official List of Specific Names in Zoology the name *tigrina* Fabricius, 1775 as published in the binomen *Musca tigrina* (specific name of the type species of *Coenosia* Meigen, 1826);

(4) to place on the Official List of Family Names in Zoology the name COENOSIINAE Verrall, 1888 (type genus: *Coenosia* Meigen, 1826) with the endorsement that it is to be given precedence over LIMOSELLINAE Robineau-Desvoidy, 1830 whenever the two are placed in synonymy in the same family group;

(5) to place on the Official List of Family Names in Zoology the name LIMOSELLINAE Robineau-Desvoidy, 1830, with the endorsement that it is not to be given priority over COENOSIINAE Verrall, 1888 whenever the two are placed in synonymy in the same family group.

References

- Bezzi, M. & Stein, P. 1907. Cyclorrapha Aschiza. Cyclorrapha Schizophora: Schizometopa. In Becker, T., Bezzi, M., Kertész, K. & Stein, P. (Eds.), *Katalog der paläarktischen Dipteren*, vol. 3. 828 pp. Budapest.
- Bisby, F.A., Roskov, Y.R., Orrell, T.M., Nicolson, D., Paglinawan, L.E., Bailly, N., Kirk, P.M., Bourgoin, T., Baillargeon, G., Ouvrard, D. (Eds.). 2011. Species 2000 & ITIS Catalogue of Life: 2011 Annual Checklist. DVD; Species 2000, Reading, UK.
- Blainville, H.M.D. de. 1826. *Rapport sur les Myodaires du Docteur Robineau Desvoidy*. 24 pp. Académie des Sciences, Paris.
- Carvalho, C.J.B. de, Couri, M.S., Pont, A.C., Pamplona, D. & Lopes, S.M. 2005. A catalog of the Muscidae (Diptera) of the Neotropical Region. *Zootaxa*, **860**, 1–282.
- Dely-Draskovits, Á. 1993. Family Anthomyiidae pp. 11–102 in Soós, Á. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 13. Anthomyiidae—Tachinidae. 624 pp. Hungarian Natural History Museum, Budapest.
- Drapiez, P. 1837. Coenosie. *Coenosia*, p. 532 in: *Dictionnaire classique des sciences naturelles, présentant la définition, l'analyse et l'histoire de tous les êtres qui composent les trois règnes, leur application générale aux arts, à l'agriculture, à la médecine, à l'économie domestique, etc.; résumant tous les faits présentés par les dictionnaires d'histoire naturelle; augmenté des nombreuses découvertes acquises depuis la publication des ces ouvrages*. Tome second. 570 pp. Meline, Bruxelles. [Note: a reprinted edition dated “1853”, inadvertently omitted from Evenhuis (1997), exists. It consists of the same text as the original with only a change in year on the title page.]
- Evenhuis, N.L. 1997. *Litteratura Taxonomica Dipteriorum (1758–1930) being a selected list of the books and prints of Diptera taxonomy from the beginning of Linnaean nomenclature to the end of the year 1930; containing information on the biographies, bibliographies, types, collections, and patronymic genera of the authors listed in this work; including detailed information on publication dates, original and subsequent editions, and other ancillary data concerning the publications listed herein*. 2 vols. Backhuys Publishers, Leiden. x, 871 pp.
- Fabricius, J.C. 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. xxxii, 832 pp. Officina Libraria Kortii, Flensburgi & Lipsiae.
- Hennig, W. 1961. Muscidae [Part, Lieferung 215] pp. 481–528 in Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region*, vol. 63b. E. Schweizerbart, Stuttgart.
- Huckett, H.C. 1965. Family Muscidae, pp. 869–915 in Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. (Eds.), *A catalog of the Diptera of the Americas north of Mexico*. *United States Department of Agriculture, Agricultural Handbook*, **286**: i–iv, 1–1696.
- International Commission on Zoological Nomenclature (I.C.Z.N.) 1922. Interpretation of the expression “typical species” in Westwood’s (1840) Synopsis. *Smithsonian Miscellaneous Collections*, **73**: 16–18.
- Lioy, P. 1864. I ditteri distribuiti secondo un nuovo metodo di classificazione naturale [part]. *Atti di Reale Istituto Veneto di Scienze Letteri et Arti*, (3)**9**: 989–1027.
- Macquart, P.-J.-M. 1835. *Histoire naturelle des insectes. Diptères*. Tome deuxième. 703 pp. N.E. Roret, Paris.
- Meigen, J.W. 1826. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Fünfter Theil. xii, 412 pp. Schulz-Wundermann, Hamm.
- Pape, T. & Thompson, F.C. (Eds.). 2010. *Systema Dipteriorum*, Version 10.0. <http://www.diptera.org> [accessed 11.v.2012]
- Pont, A.C. 1977. Family Muscidae, pp. 451–523 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region*. Volume III. Suborder Cyclorhapha (excluding Aschiza). x, 854 pp. University of Hawaii Press, Honolulu.
- Pont, A.C. 1980. Family Muscidae, pp. 721–761 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. 1437 pp. British Museum (Natural History), London.

- Pont, A.C.** 1986. Family Muscidae. Pp. 57–215 in Soós, Á., & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera*. Volume 11. Scathophagidae—Hypodermatidae. 346 pp. Akadémiai Kiadó, Budapest.
- Pont, A.C.** 1989. Family Muscidae. Pp. 675–699 in Evenhuis, N.L. (Ed.), *Catalog of the Diptera of the Australasian and Oceanian regions*. 1155 pp. Bishop Museum Press, Honolulu.
- Poole, R.W.** 1996. Diptera. Pp. 15–604 in Poole, R.W. & Gentili, P. (Eds.), *Nomina Insecta Nearctica. A checklist of the insects of North America*. Volume 3: Diptera, Lepidoptera, Siphonaptera. 1143 pp. Entomological Information Services, Rockville, Maryland.
- Robineau-Desvoidy, J.-B.** 1830. Essai sur les myodaires. *Mémoires présentés par divers savans à l'Académie Royale des Sciences de l'Institut de France* (Sciences Mathématiques et Physiques), (2) 2: 1–813 pp.
- Sabrosky, C.W.** 1999. Family-group names in Diptera. An annotated catalog. *Myia*, 10: 1–360.
- Verrall, G.H.** 1888. *A list of British Diptera*. 34 pp. Pratt & Co., London.
- Westwood, J.O.** 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.), pp. 125–154 in: *An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects*. 158 pp. Longman, Orme, Brown, Green & Longmans, London.

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Case 3598***Thyone* Oken, 1815 and *Psolus* Oken, 1815 (Echinodermata, Holothuroidea): proposed reinstatement as available names**

Gustav Paulay

*Florida Museum of Natural History, University of Florida, Gainesville
FL 32611–7800 U.S.A (e-mail: paulay@flmnh.ufl.edu)*

P. Mark O'Loughlin

*Marine Science Department, Museum Victoria, GPO Box 666, Melbourne
3001, Australia (e-mail: pmoloughlin@edmundrice.org)*

Abstract. The purpose of this application, under Articles 80.7.2 and 81.1 of the Code, is to reinstate as available the generic names *Thyone* Oken, 1815 and *Psolus* Oken, 1815, which were introduced by Oken (1815) in a work that was rejected by the Commission in Opinion 417 because it was not consistently binominal. The names acquired availability from subsequent use by Lesson (1830) with concepts that differ completely from Oken's, and from the currently accepted usage of these names. *Thyone* and *Psolus* are among the most frequently used generic names in the Holothuroidea. It is requested that the Commission reinstate the availability of the names *Thyone* Oken, 1815 and *Psolus* Oken, 1815 published in the rejected work for the sake of nomenclatural stability.

Keywords. Nomenclature; taxonomy; Echinodermata; Holothuroidea; *Thyone*; *Psolus*; *Thyone fusus*; *Psolus phantapus*; sea cucumbers; cosmopolitan.

1. Oken (1815) was the first to divide the class Holothuroidea into multiple genera: *Thyone* (p. 351), *Holothuria* (p. 351), *Subuculus* (p. 351), *Psolus* (p. 352). *Thyone* and *Subuculus* were monotypic genera, type species *Thyone fusus* (= *Holothuria fusus* Müller, 1776, p. 232; PHYLLOPHORIDAE Östergren, 1907) and *Subuculus penicillus* (= *Holothuria penicillus* Müller, 1776, p. 232, subjective synonym of *Holothuria fusus* Müller, 1776) respectively, while three species were listed for *Psolus*: *P. phantapus* (= *Holothuria phantapus* Strussenfelt, 1765, p. 263), *P. pentactes* (= *Holothuria pentactes* Linnaeus, 1767, p.1091), and *Psolus squammosus* (incorrect subsequent spelling for *Holothuria squamata* Müller, 1776, valid, accepted as *Psolus squamatus*). Clark (1946) designated *Holothuria phantapus* as the type species of *Psolus*, in turn the type genus of the PSOLIDAE Forbes, 1841.

2. Oken's (1815) work was suppressed by the Commission in Opinion 417 (BZN 14: 1–42; September 1956) because it 'did not apply the principles of binominal nomenclature'. The ruling also stated: 'Specialists in the groups dealt with in the foregoing work are invited to submit to the International Commission on Zoological Nomenclature applications for the validation under the Plenary Powers of any name published in it, the rejection of which would, in their opinion, lead to instability or confusion in the nomenclature of the group concerned'.

3. While *Subuculus* Oken has been largely forgotten and does not appear past the mid-1800s in the echinoderm taxonomic literature, 59 valid species are currently attributed to *Psolus*, and 59 valid species are currently attributed to *Thyone* (WoRMS, 2012). *Psolus* is cosmopolitan, currently recognized from the Arctic to the Antarctic, through the tropics and includes such well-known European and American taxa as *P. phantapus* (Strussenfelt, 1765), *P. fabricii* (Düben & Koren, 1846), *P. squamatus* (Müller, 1776), and *P. chitinoides* (Clark, 1901). *Thyone* is also broadly distributed across all oceans, in temperate to tropical latitudes, and includes the well-known European *Thyone fusus* (Müller, 1776).

4. Pawson & Miller (1981, p. 394) pointed out the impact of Opinion 417 on *Thyone*, and transferred authorship to Jaeger (1833), the publication that they considered to have been the first available use of the genus after Oken (1815). Jaeger (1833, pp. 8–9) reviewed Oken's work and introduced *Thyone* in that context, listing *T. fusus*, and also introduced *Psolus*, listing '*Psolus pantapus*' [sic; = *phantapus*] and *T. squamosus* [sic; *squammosus* of Oken, 1815 and *squamata* of Müller, 1776].

5. If Jaeger's (1833) was the first valid use of these generic names after Oken (1815), then they could be attributed to him without changing their meaning as understood today; however Lesson (1830) also listed these genera, and if Oken's authorship is rejected, they would take their availability from Lesson's usage. Lesson (1830) attributed two species to *Thyone*: '*Holothuria (Thyone, Oken) eaouari*, Less.' (p. 91, an echiuran worm likely of the genus *Ochetostoma*), and '*Holothuria (Thyone Oken) edulis*, Less.' (p. 125, currently *Holothuria (Halodeima) edulis* Lesson, 1830). He attributed one species to *Psolus*, '*Holothuria (Psolus, Oken) monacaria*, Less.' (p. 225, currently a junior synonym of *Holothuria (Mertensiothuria) hilla* Lesson, 1830). Based on Lesson's (1830) use, both *Thyone* and *Psolus* would need to be considered as junior synonyms of the aspidochirotid genus *Holothuria* Linnaeus, 1767, (or, alternatively for *Thyone*, of the echiuran *Ochetostoma* Leuckart & Ruppell, 1828, depending on subsequent type designation), instead of valid, dendrochirotid genera.

6. We propose that in the interest of stability and to preserve the current usage and meaning of the generic names *Thyone* and *Psolus*, Oken's names be deemed available under the plenary power. However, we have refrained from making a type designation for *Thyone* Lesson, 1830, as that name would only need to be considered if *Thyone* Oken, 1815 was not reinstated. Another option would be to ask the Commission to suppress *Thyone* Lesson, 1830 and *Psolus* Lesson, 1830 for the purposes of both the Principle of Priority and the Principle of Homonymy and put these two names on the Official Index, while also putting *Thyone* Jaeger, 1833, *Psolus* Jaeger, 1833, and their type species on the Official Lists. However, we prefer the course presented, as it was recommended by the Commission's original ruling in Opinion 417. Similar requests to reinstate Oken's (1815) names based on practical necessity brought about by long usage have been previously approved by the Commission (e.g. Opinion 674 BZN 20: 329–330, October 1963; Opinion 902 BZN 26: 221–222, April 1970; etc.).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the names *Thyone* Oken, 1815 and *Psolus* Oken, 1815 are available from the original publication by Oken (1815);
- (2) to place on the Official List of Generic Names in Zoology the following names:

- (a) *Thyone* Oken, 1815 (gender: feminine), type species by monotypy *Holothuria fusus* Müller, 1776;
- (b) *Psolus* Oken, 1815 (gender: masculine), type species by subsequent designation by Clark (1946) *Holothuria phantapus* Strussenfelt, 1765;
- (3) place on the Official List of Specific Names in Zoology the following names:
 - (a) *fuscus* Müller, 1776, as published in the binomen *Holothuria fusus*, the specific name of the type species of *Thyone* Oken, 1815;
 - (b) *phantapus* Strussenfelt, 1765, as published in the binomen *Holothuria phantapus*, the specific name of the type species of *Psolus* Oken, 1815.

References

- Clark, H.L. 1901. The Holothurians of the Pacific Coast of North America. *Zoologischer Anzeiger*, **24**: 162–171.
- Clark, H.L. 1946. The echinoderm fauna of Australia. Its composition and its origin. *Carnegie Institution of Washington Publication*, **566**: 1–567.
- Düben, M.W. von & Koren, J. 1846. Öfversigt af Skandinaviens Echinodermer. *Kongliga Svenska Vetenskaps-Akademiens Handlingar, Stockholm*, **1844**: 229–328.
- Forbes, E.A. 1841. *A history of British starfishes and other animals of the class Echinodermata*. 267 pp. John van Voorst, London.
- Jaeger, G.F. 1833. *De Holothuriis*. 41 pp., 3 pls. Typis Gessnerianis, Turici.
- Lesson, R.P. 1830. *Centurie zoologique, ou choix d'animaux rares, nouveaux ou imparfaitement connues*. 254 pp., 80 pls. Levrault, Paris.
- Linnaeus, C. 1767. *Systema Naturae*, Ed. 12, vol. 1, part 2. Pp. 533–1327. Salvii, Holmiae.
- Müller, O.F. 1776. *Zoologiae Danicae prodromus, seu animalium Daniae et Norvegiae indigenarum. Characteres, nomina, et synonyma imprimis popularium*. xxxii, 282 pp. Typis Hallageriis, Havniae.
- Oken, L. 1815. *Oken's Lehrbuch der Naturgeschichte. Teil 3. Zoologie*. 850 pp. C.H. Reclam, Jena.
- Östergren, H. 1907. Zur Phylogenie und Systematik der Seewalzen. In, *Särtryck ur Zoologiska Studier Tillägnade Professor T. Tullberg*. Pp. 191–215. Almqvist & Wiksells Buchdruckerei-Aktiengesellschaft, Upsala
- Pawson, D.L. & Miller, J.E. 1981. Western Atlantic sea cucumbers of the genus *Thyone*, with description of two new species (Echinodermata: Holothuroidea). *Proceedings of the Biological Society of Washington*, **94**: 391–403.
- Strussenfelt, A.M. 1765. Befkrifning på er Sj-kråk, Hafs-Spöke kalladt. *Kongliga Svenska Vetenskaps-Akademiens Handlingar, Stockholm*, **26**: 256–266.
- WoRMS. 2012. *Holothuroidea*. Accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=123083> on 2012-06-29.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

**Comment on *Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE):
request for a ruling on the availability of the generic name**
(Case 3518; see BZN 68: 97–104, 282–292; 69: 124–127, 219–221)

Ruud A. Bank

Chopinlaan 21, 9603 AM Hoogezand, The Netherlands
(e-mail: Ruud.Bank@quicknet.nl)

In the last two decades, the taxon that was known before as *Helix aspersa* Müller, 1774 has been placed in a genus different from that of *Helix*. The oldest name for this genus is *Cornu* Born, 1778; its type species *Cornu copiae* Born, 1778 (by monotypy) is a junior synonym of *Helix aspersa* Müller, 1774. According to Welter-Schultes & Audibert (BZN 69: 125) ‘The trouble . . . began only around 1990 when subgenera were raised to genera’. Furthermore, these authors state that they placed *aspersa* into the genus *Helix* in their 2011 checklist of France because ‘a separate genus is not really necessary’. The authors apparently overlooked two recent important studies, showing that *aspersa* has nothing to do with *Helix*. First, Manganelli et al. (2005) showed with molecular studies, that *aspersa* clusters with *Eobania vermiculata* (Müller, 1774), and not with *Helix pomatia* Linnaeus, 1758 or *Helix lucorum* Linnaeus, 1758. This was independently confirmed by anatomical studies by Neubert & Bank (2006), who showed that details of the anatomy of the penial papillae are basically different between *aspersa* and *Helix*, but not between *Eobania* and *aspersa*. The relevance of the penial twin papillae system is also described by Alonso & Ibáñez (2007) and it is now clear that *aspersa* is not a *Helix*. In fact, Giusti et al. (1995) had also clearly shown the non-*Helix* status of *aspersa* by anatomical studies some time earlier.

We do not understand what Welter-Schultes & Audibert (BZN 69: 124–127) mean by ‘correct names’ for *aspersa*. *Helix* is not a correct name for *aspersa* if one wants to reflect evolutionary relationships within nomenclature. *Cryptomphalus* Charpentier, 1837 (with its type species *Helix aspersa*) is a junior synonym of *Cornu*, and therefore not a correct name as well – at least if one follows the Articles of the Code. *Cantareus* Risso, 1826 (with its type species *Helix aperta* Born, 1778) is considered a genus distinct from *Cornu*, e.g. by Liberto et al. (2010) and Colomba et al. (2011). Welter-Schultes & Audibert (BZN 69: 126) mentioned that ‘most important malacological research teams from Italy, Ukraine and Russia . . . have not accepted the use of *Cornu*. The fact that Italian authors have largely rejected *Cornu* is the reason why *Cornu* has nowhere yet been used for *Helix aperta*’. However, the research teams from Italy and Ukraine mentioned by Welter-Schultes & Audibert, such as those of Manganelli and Sverlova, all accept the use of *Cornu* in their more recent publications (Gavetti et al., 2008; Balashov & Gural-Sverlova, 2012). *Cornu* is not used for *aperta* because this species is mostly not considered to be congeneric with *aspersa*, not only by central and western European teams, but also by Italian teams (Liberto et al., 2010; Colomba et al., 2011).

Clearly, I fully support the proposals of Cowie: it serves the stability of the nomenclature of a common land snail species that is now correctly known as *Cornu aspersum* (Müller, 1774).

Additional references

- Alonso, M.R. & Ibáñez, M. 2007. Anatomy and function of the penial twin papillae system of the Helicinae (Gastropoda: Helicoidea: Helicidae) and description of two new, small *Hemicycla* species from the laurel forest of the Canary Islands. *Zootaxa*, **1482**: 1–23.
- Balashov, I. & Gural-Sverlova, N. 2012. An annotated checklist of the terrestrial molluscs of Ukraine. *Journal of Conchology*, **41**: 91–108.
- Colomba, M.S., Gregorini, A., Liberto, F., Reitano, A., Giglio, S. & Sparacio, I. (2011): Monographic revision of the endemic *Helix mazzullii* De Cristofori & Jan, 1832 complex from Sicily and re-introduction of the genus *Ercella* Monterosato, 1894 (Pulmonata, Stylomatophora, Helicidae). *Zootaxa*, **3134**: 1–42.
- Gavetti, E., Birindelli, S., Bodon, M. & Manganelli, G. 2008. Molluschi terrestri e d'acqua dolce della Valle di Susa. *Museo Regionale di Scienze Naturali, Monografie*, **XLIV**: 1–273.
- Giusti, F., Manganelli, G. & Schembri, P.J. 1995. The non-marine molluscs of the Maltese Islands. *Museo Regionale di Scienze Naturali, Monografie*, **XV**: 1–607.
- Liberto, F., Giglio, S., Reitano, A., Colomba, M.S. & Sparacio, I. 2010. Molluschi terrestri e dulciacquicoli di Sicilia della collezione F. Minà Palumbo di Castelbuono. *Monografie Naturalistiche*, **2**: 1–134.
- Manganelli, G., Salomone, N. & Giusti, F. 2005. A molecular approach to the phylogenetic relationships of the western palaearctic Helicoidea (Gastropoda: Stylommatophora). *Biological Journal of the Linnean Society*, **85**: 501–512.
- Neubert, E. & Bank, R.A. 2006. Notes on the species of *Caucasotachea* C. Boettger 1909 and *Lindholmia* P. Hesse 1919, with annotations to the Helicidae (Gastropoda: Stylommatophora: Helicidae). – *Archiv für Molluskenkunde*, **135**: 101–132.

Comment on *Turbo bidens* Linnaeus, 1758 (Gastropoda, CLAUSILIIDAE): request for setting aside the neotype

(Case 3581; see BZN **69**: 85–87, 213–218)

Francisco W. Welter-Schultes

Zoologisches Institut, Berliner Strasse 28, 37073 Göttingen, Germany
(e-mail: fwelter@gwdg.de)

In his detailed comment Kadolsky (BZN **69**: 213–218) summarized one side of the *Turbo bidens* dispute. Maybe I could even agree with some of these arguments (except that my statement in para. 6 was misunderstood, where I said ‘the identity of the taxon was nowhere disputed’ I meant *Helix papillaris*). Generally I think Kadolsky’s arguments are not bad, but this is not the point.

The point is that this is a 230 year-old dispute which has been presented to the Commission in 2005, and the Commission took a decision in 2007. The Commission decided that it would be best to regard *Turbo bidens* as a ‘senior subjective synonym’ of *Helix papillaris*, this term was used in the abstract of the published Opinion 2176. Was this good? Was this bad? Was this in agreement with the eternal truth? I do not know. It was the Commission’s decision to vote in favour of this view. The Opinion reflected of course only one side of the dispute (I summarised these arguments briefly in my application), but it was in all aspects tenable. The usual procedure is to accept such a decision, and to regard the dispute as principally solved.

We ask the Commission if we need an objective judgement to solve a dispute which we cannot solve ourselves. This works best if everyone accepts such a decision afterwards.

Comment on the proposed establishment of availability of *Balintus* d'Abrera, 2001, *Gulliveria* d'Abrera & Bálint, 2001, *Salazaria* d'Abrera & Bálint, 2001, *Megathecla* Robbins, 2002 and *Gullicaena* Bálint, 2002 (Insecta, Lepidoptera, LYCAENIDAE)
(Case 3458; see BZN 65: 188–193; 66: 271–272, 349–351; 68: 206–211; 69: 60–61)

Zsolt Bálint

*Hungarian Natural History Museum, Baross utca 13, Budapest VIII, H-1088,
Hungary* (e-mail: balint@nhmus.hu)

Bernard d'Abrera

*137 Ridge Road, Mount Dandenong, Victoria, 3767,
Australia* (e-mail: bfly@clara.co.uk)

1. We respond to the recent comments of Robbins & Lamas (BZN 69: 60–61), in which they confuse nomenclature and taxonomy and cling to their erroneous concept that the diagnoses of eight generic names proposed by Bálint & d'Abrera (or d'Abrera solely) in d'Abrera (2001) somehow 'differentiate the type species, not the genus'. Therefore it is not surprising that most of the justified responses of Bálint & d'Abrera on the case (BZN 68: 206–210) were considered by the applicants to be 'not relevant'. In their latest comment they attempt yet again to convince readers that they had 'proposed a solution in which all names that were in use were to be considered to be available and those that were not in use were to be considered to be unavailable.' Evidence as to which names were in use had been presented in their original application.

2. The applicants are of the opinion that the names of Eliot proposed in 1973 in his 'tentative arrangement' shown by us as examples for illuminating this case, are irrelevant because they claim they are governed by the now defunct Second Edition of the Code (1964). Although we brought these examples only to demonstrate how easy it is to question well established names using the methods invented by the applicants, therefore it becomes irrelevant to consider whether they are governed by another, already defunct version of the Code. Nevertheless the relevant article 13(i) of the defunct code regulates that any names published after 1930 must be 'accompanied by a statement that purports to give characters differentiating the taxon'. Consequently the Eliotian names may easily be questioned in a similar way: not the new genera, but their type species, which were accompanied by a statement that purports to give characters differentiating the taxon. Moreover, the argument of the applicants is incorrect, because in any case the most recent Code does regulate all the names, also including those proposed by Eliot in 1973, and any nomenclatural question regarding them. Thus clearly the relevant articles must be cited and referred to from the governing version of the Code, and not from the defunct one (Article 86.3).

3. The applicants wrote that Eliot's wording and our wording was not identical. This argument is a semantic nonsense, as the descriptions of different taxa must be shown to be dissimilarly worded. In our previous response we wrote that Eliot's diagnoses were worded in an almost identical manner to ours therefore those names become easy victims when using the methods of the applicants for rejection, especially when someone wants other names replacing the ones proposed by Eliot.

Interestingly none of these names were questioned by one of the applicants, who authored a list of generic names of the butterflies of the world (Lamas, 2008).

4. The applicants have expressed their view that ‘in evident contrast’ to the names Bálint & d’Abrera proposed, Eliot’s names were ‘differentiated’ by ‘generic characters’. But significantly, none of the editions of the Code defines what a generic character is, and what may or may not be ‘in evident contrast’, and therefore this is not regulated by the Code. What the Code does regulate are the various technical circumstances for making any newly proposed name available. And (remaining strictly in the present case) it must to that end be ‘accompanied by a description or definition’ of the taxon proposed. Clearly therefore, it is not the function of any nomenclature per se, to provide judgement as to whether the characters described actually distinguish the taxon proposed, or any other. How any nomenclaturist can then claim to be applying objectively the articles of the Code in distinguishing the diagnoses of Eliot as being generic, whilst those of Bálint & d’Abrera ‘in evident contrast’ are not, is a great mystery!

5. What is evident: as Eliot did, d’Abrera and Bálint used characters they found on the type species to diagnose the genus and on the basis of this they placed further species in the newly proposed genera when these turned out to be polytypic. The genus-group names proposed in d’Abrera (2001) are individually marked by the required suffix ‘gen. nov.’ expressing the intention of the author(s) to establish new nominal taxa following the Article 16.1. If the applicants have not noticed the suffixes and because of that, have doubts about the availability of the names, then Article 13.3 of the Code rules more strictly the availability of the genus-group names and concentrates on the fixation of the type species. Moreover because in each and every case there is the clearly indicative suffix ‘gen. nov.’ it does not make sense to claim, citing the Code, that the description that states in words, characters purported to differentiate the taxon proposed, are describing only the type species, and by extrapolation only the specimen used for the diagnosis. Further, the entry ‘congeneric species’ in the case of polytypic genera underlines that the description is purported to distinguish all the taxa placed in new combinations. Moreover the reasoning of the applicants is illogical as they claim that ‘only’ the type species is being described, but not the genus. This is because any generic diagnosis must also fit the type species selected; otherwise the designation of a type species becomes pointless if it cannot serve as an objective reference for nomenclatural intention of universality and stability. Therefore Bálint & d’Abrera (2011) did not reinterpret their original ‘verbal description’ but have shown by applying the ‘implied grammatical subject’ method contrived by the applicants to this case, that the applicants were mistaken. We repeat, (a) there is a diagnosis and (b) there is a type species clearly and unambiguously designated for each of the generic names proposed in d’Abrera (2001).

6. The paragraphs we have provided concerning ethical issues were necessarily there to demonstrate that the present case has a subjective background on the part of the applicants. Indeed while the Code of Ethics has no power to rule, the Code does concern itself with ethical matters by making recommendations from time to time, thus tacitly admitting their potential for influence. This is because, being entirely realistic, the Commission has always recognised that ethical issues do and must help to regulate the intentions of persons proposing names for living or extinct organisms.

The website the applicants cited as reference is the intellectual work of one of the applicants and is a checklist of names of Neotropical lycaenid butterfly genera (Robbins, 2004). In that checklist Dr. Robbins expressed wholly or partly different taxonomic concepts for many of the genus-group names newly proposed for Neotropical eumaeine lycaenids an entire three years earlier in d'Abrera (2001). Those novel taxonomic concepts were never published by the applicants in any taxonomic journal, but the matter was discussed in length in their application in spite of the fact that according to the Articles 17 and 18 of the Code this dimension is absolutely irrelevant for nomenclature. The only exception was their concept for the generic name *Annamaria* following the revision of Bálint (2005).

7. The hitherto published use of the generic names *Annamaria* (see Bálint, 2005; Robbins & Duarte, 2008; Bálint, 2010), *Megathecla* (see Faynel, 2009) and *Riojana* (see Bálint, Kertész & Wojtusiak, 2006) show that the original definitions of these names are sound and applicable from a nomenclatural point of view. Moreover there are many cases where the species diversity (lists of individual species names) and generic concepts (contents of names) expressed in the checklist compiled by Robbins (2004) and the website mentioned above, and the most recent results diverge, e.g. Bálint, Kertész & Wojtusiak (2006); Duarte & Robbins (2010); Prieto (2008); Robbins, Busby & Duarte (2010); Robbins et al. (2012), etc. Therefore, we ask how do universality and stability become threatened if the names proposed by the applicants for rejection continue to appear unambiguously as given in published books, checklists and papers dealing with Neotropical eumaeine lycaenid classification, faunistics, or taxonomy? On the contrary, those 'generic concepts' of Robbins (2004) have nothing to do with nomenclature sensu stricto, nor with stability. In sum: the arguments of the applicants cannot serve the stability of nomenclature. The names they would like to suppress are well established and have been in universal usage since 2001, so their application is incorrect and redundant.

Additional references

- Bálint, Zs., Kertész, K. & Wojtusiak, J. 2006. The description of *Atlides halljasoni* n. sp. from Ecuador and its spectrographic characterization with some notes on the genus (Lepidoptera: Lycaenidae: Eumaeini). *Genus, Wrocław*, **17**: 409–415.
- Duarte, M. & Robbins, R.K. 2010. Description and phylogenetic analysis of the Calycopidina (Lepidoptera, Lycaenidae, Theclinae, Eumaeini): a subtribe of detritivores. *Revista Brasileira de Entomologia*, **54**: 45–65.
- Faynel, C. 2009. A new *Megathecla* from French Guiana (Lepidoptera: Lycaenidae: Theclinae: Eumaeini). *Lambillionea*, **59**: 331–335.
- Lamas, G. 2008. Genera and Genus-group Names of the Butterflies of the World (revised 4 Feb 2008) – 4,739 names. (<http://www.ucl.ac.uk/taxome/gbn/>; accessed: 28.VIII.2012)
- Prieto, C. 2008. Taxonomía, Biogeografía y Relaciones Filogenéticas del Género Alto-Andino *Penaincisalia* Johnson (Lepidoptera: Lycaenidae: Eumaeini) 268 pp. Tesis Doctoral, Universitat d'Alacant.
- Robbins, R.K., Busby R. C. & Duarte, M. 2010. Phylogeny and Taxonomy of the Neotropical *Thepytus* (Lepidoptera: Lycaenidae: Theclinae). *Arthropod Systematics & Phylogeny*, **68**: 35–52.
- Robbins, R.K., Martins, A.R.P., Busby, R. C. & Duarte, M. 2012. Loss of male secondary sexual structures in allopatry in the Neotropical butterfly genus *Arcas* (Lycaenidae: Theclinae: Eumaeini). *Insect Systematics & Evolution*, **43**: 35–65.

Comments on the proposed conservation of usage of the specific name of *Scarabaeus fimetarius* Linnaeus, 1758 (currently *Aphodius fimetarius*; Insecta, Coleoptera, SCARABAEIDAE) by designation of a neotype
(Case 3579; see BZN 69: 29–36, 128–140, 221–229)

(1) Aleš Bezděk

Biology Centre ASCR, Institute of Entomology, Branišovská 31, CZ-370 05 České Budějovice, Czech Republic (e-mail: bezdek@entu.cas.cz)

David Král

Department of Zoology, Faculty of Science, Charles University in Prague, Viničná 7, CZ-128 43 Praha 2, Czech Republic (e-mail: kral@natur.cuni.cz)

Wilson (2001) published her results on karyology of a widely-distributed taxon which so far had been treated as *Aphodius fimetarius* (Linnaeus, 1758). She concluded that this taxon included in fact two different species and designated a lectotype for *Scarabaeus fimetarius* from the original Linnean type series. Unfortunately, Linnean type series was a mixture of species and she has chosen as a lectotype of *S. fimetarius* a specimen belonging to *Aphodius foetens* (Fabricius, 1787), a quite different species easily recognizable by its red abdomen.

Angus et al. (BZN 69: 29–36) and Fery (BZN 69: 128–136) presented two possible solutions of a nomenclatural problem that had arisen from splitting of *A. fimetarius* and the inappropriate designation of its lectotype.

Both of them asked the International Commission of Zoological Nomenclature to use its plenary power to set aside all previous type fixations for the nominal species *fimetarius* Linnaeus, 1758 as published in the binomen *Scarabaeus fimetarius*. If the lectotype is set aside, a neotype designation will be required. And there is the main difference between Angus et al.'s (BZN 69: 29–36) and Fery's (BZN 69: 128–136) concepts. Angus et al. nominates a specimen from 'England, E. Kent' of which Wilson (2001) studied the karyotype, while Fery suggests one from the original Linnean type series – that with number LIN 3386. Because these proposed specimens belong to different species, designation of either of them will differently affect usage of the name *Aphodius fimetarius*. It should be noted, that both concepts are formally correct. Nevertheless, we would like to support the solution proposed by Fery in the interest of nomenclatural stability, as:

– the name *A. fimetarius* will be used for a species which Fery called 'with red elytra' (and not 'with yellowish-red elytra'), which has, according to the current knowledge, a more northern distribution and is the only species occurring in Sweden, the generally assumed locus typicus of *Scarabaeus fimetarius* (Bellmann et al., BZN 69: 136–138; Rößner, 2012).

– contrary to Angus et al. (BZN 69: 29–36) and Barclay (BZN 69: 139–140) we are not convinced that the usage of the name *Aphodius pedellus* (De Geer, 1774) in the sense of Wilson (2001) and Whitehead (2006) is widely accepted by the 'community' since 2001. According to Fery's concept, however, *A. pedellus* would remain a subjective junior synonym of *A. fimetarius*, as it was accepted for more than 250 years.

(2) Ludger Schmidt

Brakenweg 5, D-31535 Neustadt a. Rbge.-Empede, Germany
(e-mail: ludger.schmidt1@gmx.de)

Harald Kalz

Am See 108, D-15926 Luckau-Schlabendorf, Germany (e-mail: Kalz@spreewald.de)

Joachim Schulze

Mahlsdorfer Str. 98c, 12555 Berlin, Germany

Werner Schulze

Samlandweg 15a, D-33719 Bielefeld, Germany (e-mail: WSchulze@entomon.de)

Wolfgang Ziegler

Gartenstr. 12, D-23919 Rondeshagen, Germany (e-mail: WolfZiegler@aol.com)

Carsten Zorn

Rostocker Strasse 1a, D-17179 Gnoien, Germany (e-mail: czorn70@hotmail.com)

We support the Comments on Case 3579 given by Bellmann, Hillert & Rössner and by Fery (BZN 69: 128–138) and ask the Commission to set aside the lectotype of *Scarabaeus fimetarius* Linnaeus, 1758 designated by Wilson (2001) and designate instead a neotype from the remaining paralectotypes in the Linnaeus collection number LIN 3386 which bears a label ‘*Aphodius pedellus* (DeGeer), C.J. Wilson det. 2001’.

(3) Frank-Thorsten Krell

Department of Zoology, Denver Museum of Nature & Science, 2001 Colorado Blvd, Denver, Colorado 80205–5798, U.S.A. (e-mail: frank.krell@dmns.org)

Robert B. Angus

School of Biological Sciences, Royal Holloway, University of London, Egham, Surrey TW20 0EX, U.K. & Department of Life Sciences, Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: r.angus@rhul.ac.uk)

To date eleven comments to our Case 3579 have been published. Of these 11 comments, seven support the proposal and four oppose it. It is these opposing comments that are addressed here.

1. Fery (BZN 69: 128–136) begins by stating that the name *fimetarius* refers to a ‘species with red elytra; more northern distribution in Europe’ and has been used ‘for more than 250 years by a large majority of authors’ while the ‘species with yellowish-red elytra; more southern distribution in Europe’ has been treated by most authors as a colour variant of *fimetarius*, but as a separate species, *A. cardinalis* by Reitter, 1892. Maté (BZN 69: 225–227) shows that the general treatment of *Aphodius fimetarius* in the literature has been as a species with red elytra but with some colour variation. There is no suggestion of a red form as against a yellowish red form.

Likewise Bellmann et al. (BZN 69: 139–138) and later Rößner (2012) misinterpret and misstate the historical use of the name *Aphodius fimetarius* by assigning all historical literature records not explicitly referring to the variatio or aberratio *cardinalis* to this one species that he calls *A. fimetarius* (= *A. pedellus* sensu Case 3579). Rößner (2012) did not list any literature references for Eastern Germany for *A. cardinalis*. It is highly unlikely that such a conspicuous species has never been recorded in a well-collected region. It is rather obvious that both species have been recorded in the literature under the name *A. fimetarius*.

All authors before Wilson (2001) and most authors after Wilson have applied the name *Aphodius fimetarius* to a composite species. This may be amplified by a few relevant examples. Fery himself had labelled his proposed neotype of *Aphodius cardinalis* Reitter originally as '*A. fimetarius* L.' (BZN 69: 133, Fig. 1c), not as anything different. G. Dellacasa & M. Dellacasa (2006) use for their main illustration of *A. fimetarius* (Fig. 1138, p. 404) a specimen from Calabria. Material from so far south is almost certainly *A. fimetarius* as interpreted in Case 3579, and the illustration of the aedeagus (Fig. 1140) supports this view. The Dellacasas' Figs 1141–1149 illustrate a range of colour variation but with no suggestion of a distinct form with yellowish red elytra. Costessèque (2005, p. 55) also figures the aedeagus of *A. fimetarius* as abruptly downturned, rather typical for the light coloured species, and gives the distribution as everywhere in France, without mentioning a second form or species. According to Charrier (2002) the elytra of *A. fimetarius* are from brownish red to yellowish red ('Élytres allant du brun rouge au jaune rouge') indicating that he referred to both *A. fimetarius* and *A. pedellus*. It is worth noting that Balthasar (1964, p. 364), working in Central Europe, where *A. pedellus* is the dominant species, described the elytral colour as yellow-red to pale reddish brown, sometimes with an indistinct darker foggy patch, but very rarely the elytra are black ('Flügeldecken gelbrot bis hell rotbraun, zuweilen mit undeutlichem dunklerem Nebelfleck, sehr selten sind die Flügeldecken schwarz'). This is very similar to the range of variation illustrated by Dellacasa & Dellacasa. According to Janssens (1960, p. 185f), the elytra of *A. fimetarius* are red, brownish red or reddish yellow ('élytres rouges, brun-rouge ou jaune rougeâtre'). Panin (1957, p. 173) describes a similar colour range ('Elitrele [...] roșii sau roșii-gălbui' – elytra red or yellowish red). Schmidt (1922, p. 272f) considered *Aphodius fimetarius fimetarius* as having 'Flügeldecken bräunlich- oder gelbrot' (wing cases brownish or yellowish red), but listed another subspecies, *A. fimetarius subluteus* as having the elytra yellowish red, occurring together with the nominal subspecies. He lists *A. fimetarius cardinalis* from Syria, Algeria, Andalusia, and France with full-length fourth elytral interval and all intervals being keeled at the apex, without referring to colour differences.

Max Barclay (BZN 69: 139–140) notes that although both species are widespread, *A. fimetarius* is more southern and western than *A. pedellus*, and that authors are likely to think of the typical *A. fimetarius* as the species usual in their geographical areas. This is borne out by comparison of the figures of the aedeagi of *A. fimetarius* given by Paulian (1959, Fig. 225), which shows the abruptly downturned parameres shown by Rößner to be typical of *fimetarius* in the sense of Case 3579, and by Bunalski (1999) for the Central European fauna, where his Fig. 78A clearly shows the more gently downturned apices typical of *A. pedellus*.

It is thus clear that published references to *A. fimetarius*, prior to the recognition of two species by Wilson (2001), referred indiscriminately to both the species with no clear tendency towards either of them. In fact, as is indicated in Case 3579, all authors who have followed Wilson (2001) in recognizing that there are two species with red elytra and black abdomens have used the names *A. pedellus* and *A. fimetarius* in the sense proposed by Wilson and maintained by us in Case 3579. This usage has continued since we submitted the Case (Beynon et al., 2012a, 2012b; Mann, 2012; Molander, 2012), with the exception of Rößner (2012) whose detailed faunistic monograph of Eastern German SCARABAEOIDEA is now published. Rößner uses *Aphodius fimetarius* as the valid name for *A. pedellus* and *A. cardinalis* as the valid name for *A. fimetarius*. Rößner (2012, p. 138) used *A. cardinalis* because he could not determine in time for print whether the older name *A. subluteus* Mulsant referred to this species and needed to be used.

Fery's (and Rößner's) proposed nomenclature reverses the usage of those authors who have recognized the existence of two species comprising *A. fimetarius*, for no good reason, being based to a large extent on unproven (and to some extent unprovable) interpretation of earlier published literature.

Fery goes on to suggest *A. cardinalis* Reitter 1892 as the best name for *A. fimetarius* in the sense of Case 3579 because Reitter's description 'is the most precise and the one which fits best the characters of the species with yellowish-red elytra', and proposes a neotype to support this. He dismisses Mulsant's older, available name *A. subluteus* Mulsant, 1842, which he suggests should be set aside. *A. subluteus* was described as a variety with yellowish-red elytra, therefore most likely being identical with our *A. fimetarius*. Apart from the effort required to fix the identity of *A. subluteus* (by designation of a neotype) there seems no good reason to setting it aside. He also suggests setting aside another name older than *A. cardinalis*: *A. nodifrons* Randall 1838 (from Maine, USA), again to avoid identifying it.

We do not consider Reitter's species in any way preferable to possible older synonyms, because Reitter's species concept included only southern populations of the species. Reitter had established *A. cardinalis* for a species from Asia Minor and southern Europe. He had never mentioned its occurrence in Central Europe, where he lived. As an insect merchant, he would have taken the advantage of having for sale in numbers a species that he previously described. Therefore Reitter's concept of *A. cardinalis* was incomplete, and his concept of *A. fimetarius* was the same as any other author's concept before Wilson: a mixture of *A. fimetarius* and *A. pedellus* (sensu Wilson). That he did not recognize *A. cardinalis* in Central European material can certainly be explained by his working procedures: he wrote his keys rapidly and, by using only his 'Handsammlung', a reference collection containing a few specimens of each species (Heikertinger, 1944, p. 93) which didn't allow assessment of intraspecific variability. Since Reitter never published *A. cardinalis* from Central Europe, he almost certainly mixed the two species and identified both *A. fimetarius* and *A. pedellus* from that region as *A. fimetarius*. Reitter's (1892, p. 186) description of protruding genae in *A. cardinalis* ('die Augenlappen treten starker vor'), being a character typical for *A. pedellus*, shows that he had no good understanding of the variation within and between the species in question. Müller (1902), being aware of the variability in the length of the intervals at the tip of the elytra, Reitter's primary diagnostic character for *A. cardinalis*, considered *A. cardinalis* and *A. fimetarius* identical.

Fixing a neotype for Reitter's *Aphodius cardinalis* based on the information given by Fery is problematic. Although Reitter's collection went to the Hungarian National Museum in Budapest, parts of it were sold previously to a wealth of collectors in different countries. Reitter's son took over his father's insect business, including his 'Handsammlung' (Fleischer, 1929), the majority of which ended up in the Sleszke Museum in Opava, and a smaller part in the National Museum in Prague (Horn et al., 1990). Fery gives evidence that type material of *A. cardinalis* is absent from the collections Budapest, Prague, Munich, and Berlin, but he doesn't give evidence whether he has checked with the Opava museum, or with any other large European museum where Reitter's material might have ended up. Reitter's types might well exist. A hasty neotype designation is inappropriate without further research and the documentation of such. However, more research is necessary to determine the species identity of the two older potential synonyms of *A. cardinalis*, *A. nodifrons* Randall, 1838 and *A. subluteus* Mulsant, 1842:

Aphodius nodifrons Randall, 1838, was described from Maine, U.S.A. as having 'bright reddish' elytra. In the Latin description, the phrase 'elytris rufo-sanguineis' was used. Randall's collection is apparently lost, but he gave specimens to Thaddeus William Harris (Sprague, 1875), whose collection went to Boston Society of Natural History, and from there to Boston University (Johnson, 2004), and partly to the Museum of Comparative Zoology in Harvard (J. Traniello, in litt. 2011). FTK is in the process to determine whether type material of *A. nodifrons* still exists.

A. subluteus Mulsant, 1842, was described as a yellowish red variant of *A. fimetarius* from France. Type material of this species has to be considered lost (Paulian, 1944). Mulsant's name has occasionally been used for lighter coloured specimens of the nominal species *Aphodius fimetarius*, at infrasubspecific (e.g. Endrődi, 1956, p. 43; Panin, 1957, p. 174) and subspecific level (Schmidt, 1922) and cannot be considered a nomen oblitum. Because of the colour being described as yellowish red, *A. subluteus* is likely to be a junior synonym of *A. fimetarius* sensu Case 3579 and a senior synonym of *A. cardinalis*, but different from *A. pedellus*.

2. Bellmann, Hillert & Rössner (BZN 69: 136–138) favour designating a Linnaean specimen as neotype for *A. fimetarius* on the ground that material is now identifiable on morphological characters, and this preserves current usage. The ambiguity of current usage has already been discussed. As to identifying material on morphological characters, this is broadly true, though there are difficult specimens. The arrangement proposed in Case 3579 involves designation of a neotype whose chromosomes are known, removing any possible doubt of its identity.

Furthermore Bellmann et al. claim that Gordon & Skelley (2007) hesitated to split *A. fimetarius* into two species in their pivotal monograph of North American APHODIINAE, but they simply state that Wilson's work came too late to be considered: 'By the time Wilson's study was published, all '*A. fimetarius*' specimens used in this North American project had been returned to various lending institutions. Therefore we cannot validate their identity based on their morphology and both karyotypes may occur in North America. For now, we follow the conservative approach and consider them all to be *A. fimetarius*. ' (Gordon & Skelley, 2007: 106). Bellmann et al. also claim that 'some authors after 2001 interpreted Wilson's results meaning exactly the opposite' and present Dellacasa & Dellacasa (2006) as an example. This is wrong.

Neither M. Dellacasa & G. Dellacasa (2006), nor G. Dellacasa & M. Dellacasa (2006), nor any other author has interpreted Wilson's results in the opposite way. Many have not accepted the existence of two distinct species, but the only author in the primary literature (outside BZN) recognizing two species within the former *A. fimetarius* and interpreting *A. fimetarius* differently from Case 3579 is Rößner (2012), published half a year after Case 3579. With Rößner's work and Fery's comment (BZN 69: 139–140), we now have the unfortunate situation that the name *A. fimetarius* is applied to two distinct species. Before, the name *A. fimetarius* was either used for a composite species (*A. fimetarius* + *A. pedellus*) or for *A. fimetarius* sensu Case 3579.

3. M. & G. Dellacasa (BZN 69: 221–222) favour the solution proposed by Fery as they consider that it preserves current usage and thus promotes stability. The ambiguity of current usage of *A. fimetarius* has already been discussed at length – this argument fails. The Dellacasas further suggest that the type locality of *A. fimetarius* should be 'conventionally restricted' to Sweden, but the publications they quote in favour of this are prebinominal and thus inadmissible. Moreover, parts of northern Germany where *A. fimetarius* sensu Case 3579 occurs (Rößner, 2012, p. 139) belonged to Sweden in Linnaeus's times (Hacker & Hardenberg, 2003). The type locality and type material of *Scarabaeus fimetarius* L. are discussed in detail in paragraph 6 of Case 3579. The type locality, as stated by Linnaeus, is 'Europe' and Linnaeus lists German material as well as his own. There is thus no reason to reject the concept of *A. fimetarius* outlined in Case 3579.

4. Branco (BZN 69: 228–229) begins by reference to Landin's settling the identity of *A. foetens* (Fabricius), then suggests that Wilson could not recognize *A. foetens* and that the pronotal and head characters she gives for *A. fimetarius* (as against *A. pedellus*) are based on confusion with *A. foetens*. This is not true. The reason Wilson (and Angus) failed to recognize the Linnaean *A. foetens* is that they did not look at its abdomen, as is pointed out in Case 3579 where, incidentally, it is shown that Landin himself also failed to spot the Linnean *A. foetens*. In her 2001 paper Wilson refers to the methods for obtaining chromosome preparations, citing Shaarawi & Angus (1991). The methods described here involve removing the abdomen – not possible without looking at it! Wilson and Angus (2004) describe the karyotype of *A. foetens* as well as those of *A. fimetarius* and *pedellus*, along with *A. foetidus* (Herbst) and *A. conjugatus* (Panzer). The remainder of Branco's comment is based on this complete misinterpretation of Wilson's work.

Conclusions

No concern was shown by any authors when Wilson established her concepts of *A. fimetarius* and *A. pedellus* apart from the fact that some did not accept the splitting of the species *A. fimetarius* by rejecting or disregarding chromosomal evidence. The assignment of the names *A. fimetarius* and *A. pedellus* to the two species in question has not been criticised for a decade. Now that we initiated correction of the type selection for *A. fimetarius* to match these very concepts, suddenly protests emerge.

There is agreement that Wilson's lectotype designation needs to be suppressed and a neotype needs to be designated. There is no agreement, and in our view no sound argument for transferring the name *A. fimetarius* from *A. fimetarius* sensu Case 3579 to *A. pedellus*, and to replace the name *A. fimetarius* (sensu Wilson) by a name that

probably has available senior synonyms. Before 2001, *A. fimetarius* has always been applied to a composite species, then this composite species was split and *A. fimetarius* applied to one of the species (Wilson 2001). All those authors who accepted the split have followed Wilson (2001). Now that more authors have recognized that the former composite species is indeed composed of two distinct species, some want to apply *A. fimetarius* to the other species. This would be a source of nomenclatural instability and major confusion, particularly since we are dealing with two of the most abundant Holarctic beetle species.

Additional references

- Beynon, S.A., Mann, D.J., Slade, E.M. & Lewis, O.T. 2012b. Species-rich dung beetle communities buffer ecosystem services in perturbed agro-ecosystems. *Journal of Applied Ecology*, **49**: 1365–1372.
- Beynon, S.A., Peck, M., Mann, D.J. & Lewis, O.T. 2012a. Consequences of alternative and conventional endoparasite control in cattle for dung-associated invertebrates and ecosystems functioning. *Agriculture, Ecosystems and Environment*, **162**: 36–44.
- Bunalski, M. 1999. *Die Blatthornkäfer Mitteleuropas. Coleoptera, Scarabaeoidea. Bestimmung – Verbreitung – Ökologie*. 80 pp. Slamka, Bratislava.
- Charrier, S. 2002. Clé de détermination des Coléoptères Lucanides et Scarabéides de Vendée et de l'Ouest de la France. *Le Naturaliste Vendéen*, **2**: 61–93.
- Costessèque, R. 2005. Les *Aphodius* de France. *Une clé de détermination*. 78 pp. Magellanes, Andrésey.
- Endrődi, S. 1956. Lemeszescsapú bogarak Lamellicornia. *Fauna Hungariae*, **12**: 1–188.
- Fleischer, A. 1929. Erinnerungen an Edmund Reitter. *Entomologisches Nachrichtenblatt*, **3**: 1–2.
- Hacker, H.-J. & Hardenberg, H. 2003. *Die Schwedenstraße*. 108 pp. Hinstorff, Rostock.
- Heikertinger, F. 1944. Wie baut man eine Bestimmungstabelle? *Koleopterologische Rundschau*, **29**: 81–103.
- Janssens, A. 1960. *Faune de Belgique. Insectes Coléoptères Lamellicornes*. 411 pp. Institut Royal des Sciences Naturelles de Belgique, Bruxelles.
- Johnson, R.I. 2004. The rise and fall of the Boston Society of Natural History. *Northeastern Naturalist*, **11**: 81–108.
- Mann, D.J. 2012. 23 Family Scarabaeidae Latreille, 1802. Pp. 55–58 in Duff, A.G. (Ed.), *Checklist of beetles of the British Isles. 2nd Edition*. Pemberley Books, Iver. [This work contains a disclaimer sensu Art. 8.2 that it is not issued for the purposes of zoological nomenclature, but it does and will guide usage of names in Britain, hence needs to be considered to determine usage.]
- Molander, M. 2012. *Urban parkmarks betydelse för insektsfaunan 2: Inventering av skalbaggar, dagfjärilar och andra insekter på sandig parkmark i Genarp och Veberöd 2011*. 99 pp. Lunds kommun, Tekniska förvaltningen, Lund.
- Müller, J. 1902. Lucanidae et Scarabaeidae Dalmatiae. *Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien*, **52**: 438–466.
- Panin, S. 1957. Coleoptera Familia Scarabaeidae. (Subfamiliile: I Coprinae, [...]). *Fauna Republicii Ropulare Romîne*, **10**(4): 1–316, pls. 1–36.
- Rößner, E. 2012. *Die Hirschkäfer und Blatthornkäfer Ostdeutschlands (Coleoptera: Scarabaeoidea)*. 507 pp. Erfurt, Verein der Freunde und Förderer des Naturkundemuseums Erfurt.
- Schmidt, A. 1922. Coleoptera Aphodiinae. *Das Tierreich*, **45**: I–XXXVI, 1–614.
- Shaarawi, F.A. & Angus, R.B. 1991. A chromosomal investigation of five European species of *Anacaena* Thomson (Coleoptera: Hydrophilidae). *Entomologica Scandinavica*, **21**(1990): 415–426.
- Wilson, C.J. & Angus, R.B. 2004. A chromosomal analysis of the west European species of *Aphodius* Illiger, subgenus *Aphodius* s. str. (Coleoptera: Aphodiidae). *Tijdschrift voor Entomologie*, **147**: 259–264.

(4) Hans Fery

Räuschstrasse 73, Berlin, Germany (e-mail: hanfry@aol.com)

This comment is a response to several comments published in BZN 69(3): 221–229. Almost all comments which support the application of Angus et al. refer to my use of the terms ‘species with red elytra’ and ‘species with yellowish-red elytra’ although I proposed using these terms simply to broadly delineate the two species with a full understanding that ‘the morphological characters sometimes show tendencies to overlap,’ I did not state that the species always have elytra with one of the two colours, or can be determined safely based on this character alone. Unfortunately many comments misunderstood my intentions and criticised this terminology, although I never suggested the colour of elytra as a solid basis for identification. The recently published work of Rößner (2012, pp. 138, 140) gives a large number of characters that can safely distinguish both species on the basis of colour and/or morphology.

Another argument against my Comment is that the name *Aphodius fimetarius* had always been used before Wilson (2001) for both species. Indeed the name was used for both species, with the exception of Randall (1838) and Reitter (1892). All the other authors either ignored the differences or did not consider them sufficient for species separation, although some authors acknowledged the existence of different morphs and/or varieties. Although ‘prevailing usage’ is one of the main arguments in the application of Angus et al., that key term is only superficially dealt with in the comments, probably because these authors agree with me that most other authors have used and are still using the name *A. fimetarius* in exactly the same manner as before Wilson (2001) (i.e. for both species).

The identity of the paralectotypes of *Scarabaeus fimetarius* Linnaeus, 1758 and that of the lectotype and paralectotypes of *Scarabaeus pedellus* De Geer, 1774 is clear and undisputed (see also Angus et al. BZN 69(1)). This lectotype and the paralectotypes of both taxa belong to a single species. The identity of *A. cardinalis* Reitter, 1892 is also clear since the designation of its neotype. Wilson identified karyotypes for specimens that she identified as *A. pedellus* from southern England for the ‘species with red elytra’, and karyotypes for specimens ‘with yellowish-red elytra’ (= *A. cardinalis*; named by her *A. fimetarius*) from Cyprus. Thus, there is no need to designate a chromosomally determined specimen as neotype of *S. fimetarius*. It could be suggested, however, that the karyotypes for these species should be re-examined based on specimens from the type regions Sweden (for *pedellus*) and e.g. Spain (Andalusia, for *cardinalis*). Interestingly, neither the applicants nor any of those who supported Angus’s case asked the Commission to set aside the lectotype designation of *S. pedellus* by Wilson (2001) and to designate instead a chromosomally determined specimen as neotype.

The distribution of neither species has been fully clarified. It is certain that *A. cardinalis* (the ‘yellowish-red species’) does not occur in Sweden (the most probable type locality for *S. fimetarius* Linnaeus, 1758 and *S. pedellus* De Geer, 1774) and most probably not in most parts of European and Asian Russia. This species, however, becomes more frequent in southern Europe and seems to be the only species occurring in Northern Africa and the Near East (and also in much of Italy; pers. comm. by G. Dellacasa). The situation on the Iberian Peninsula is as follows: based

on a large amount of material studied by Rößner and myself both species on the face of it seem to be distributed in most parts of the peninsula; however, a closer inspection shows (in accordance with the assumption of ‘ecological differences’ in Maté’s Comment) that the ‘red species’ is distinctly rarer and prefers higher altitudes, while the ‘yellowish-red species’ is more frequent and prefers lower altitudes. Only two localities (in the western Pyrenees) have been found among the material studied where both species occur sympatrically.

The observation that both species occur in a few cases sympatrically by no means provides any argument against my choice of the neotype of *Aphodius cardinalis* Reitter, 1892, because the type locality has an altitude of about 50 m and all other specimens found here doubtlessly belong to that species. Thus, there is no trace of any ambiguity about the identity of this neotype. There is also no ambiguity about the identity of the paralectotypes of *S. fimetarius* in the Linnean collection. These all belong to the species which I call ‘the one with red elytra’. The identity of specimen LIN 3386 (proposed as neotype for *S. fimetarius*) is not based on a photo, but on that specimen itself, stored in the Linnean collection (cf. the Comment of M. Forshage, BZN 69(3), p. 224).

Maté (BZN 69(3), p. 227), wrote: ‘In his [Reitter’s] description the diagnostic character was not the elytral colour but the particular convexity of the interstriae near the apex (from Schmidt, 1922, p. 273)’. Maté, however, did not cite the original description, and, thus, overlooked the fact that Reitter (1892) in his description mentioned more than one character to distinguish the newly described species from *A. fimetarius* (‘red elytra’). In particular, Reitter expressly indicated the differently coloured elytra of both species. On the other hand he attributed pronounced cheeks to his *A. cardinalis*. It is possible that Reitter in his differential description confused the shape of the cheeks of both species (which can easily happen in such descriptions). I can not exclude that Reitter, when describing his new species, had in his hands a specimen with unusually strongly developed cheeks. It is, however, beyond any doubt that Reitter must have studied many other specimens from a very large distribution area (Syria (‘common’), Algeria, Andalusia), and judging from our knowledge of the distribution of both species, this must have been—except for a few among the Andalusian specimens—exclusively the species with the ‘yellowish-red elytra’. This view is supported by two further facts: (1) Reitter in Heyden, Reitter & Weise (1906, p. 718; Reitter prepared the SCARABAEIDAE part) reported this taxon from ‘E. m.’ (= southern Europe; taxa from the Near East and northern Africa are not included in this Catalogue) as an aberration of *A. fimetarius*; (2) Reitter (1909) made no record of that taxon in Central Europe.

I could have selected from my material a neotype for *A. cardinalis* with more pronounced cheeks, but have deliberately not done so in order to conform as much as possible to Wilson’s material and with what we know today about the external morphology of the ‘species with yellowish-red elytra’.

If the Commission accepts the proposals outlined in my first Comment (BZN 69 p.134) and selects a neotype for *S. fimetarius* from the paralectotypes in the Linnean collection (specimen LIN 3386), then the interpretation of Linnaeus’s *S. fimetarius* (‘the species with the red elytra’) would still be the same as before Wilson’s work, except that now we know about the existence of two species instead of one; the continuity of the principal interpretation of Linnaeus’s species would be maintained

and the risk would be avoided that the name *A. pedellus* is not accepted by the community of dung beetle specialists for the ‘species with the red elytra’. Additionally, the Commission would not deviate from Recommendation 75A of the Code. In twenty years’ time, nobody would remember a short period of 12 years during which a few authors (25 of ca. 450 authors who published about one or both of these taxa in the last decade, see BZN 69, p. 131) tried to ‘revolutionize that situation’ (A. Ballerio, BZN 69, p. 228).

Additional references

- Reitter, E.** 1906. Scarabaeidae. Pp. 715–749 in Heyden, L. von, Reitter, E. & Weise, J., *Catalogus Coleopterorum Europae, Caucasi et Armeniae Rossicae*. 775 pp. Paskau, Caen, Berlin.
- Reitter, E.** 1908. *Fauna Germanica. Die Käfer des Deutschen Reiches. II. Band*. 392 pp, 40 pls. K.G. Lutz’ Verlag, Stuttgart.
- Rößner, E.** 2012. *Die Hirschkäfer und Blatthornkäfer Ostdeutschlands (Coleoptera: Scarabaeoidea)*. Verein der Freunde & Förderer des Naturkundemuseums. 508 pp. Erfurt e.V., Erfurt.
- Schmidt, A.** 1922. Coleoptera. Aphodiinae. *Das Tierreich*, 45: xxxvi, 1–614.

Comment on *Scarabaeus* Linnaeus, 1758, *Dynastes* MacLeay, 1819, SCARABAEINAE Latreille, 1802, and DYNASTINAE MacLeay, 1819 (Insecta, Coleoptera, SCARABAEOIDEA): proposed conservation of usage
(Case 3590; see BZN 69: 182–190)

R.B. Angus

Department of Life Sciences, The Natural History Museum, London SW7 5BD, U.K. (e-mail: R.Angus@rhul.ac.uk)

I wish to register my strong support for conservation of the current usage of *Scarabaeus* and *Dynastes* and their dependant higher taxa, as proposed in Case 3590. The case has been thoroughly researched and is clearly presented. As a further illustration of the wide use of *Scarabaeus*, the pioneering and inspirational work of Fabre (1919) may be cited.

Additional reference

- Fabre, J.H.** 1919. *The sacred beetle and others*. (English translation by A. Teixeira de Mattos). 296 pp. Hodder & Stoughton, London.

(2) Brett C. Ratcliffe

W436 Nebraska Hall, University of Nebraska, Lincoln, NE 68588–0514 U.S.A. (e-mail: bratcliffe1@unl.edu)

I am writing to offer a brief comment in support of the petition in Case 3590 to conserve the current usage of the generic names *Scarabaeus* Linnaeus, 1758 and *Dynastes* MacLeay, 1819. Krell, Branco, and Ziani have constructed a detailed history of the names and demonstrated that strictly following the code would create extreme nomenclatural instability at both the generic and subfamily levels for taxa

that have been widely known and understood for nearly two centuries. One of these genera, *Scarabaeus*, would be replaced by the long forgotten name *Actinophorus*. And the subfamily in which I am a specialist, DYNASTINAE (rhinoceros beetles), would now become SCARABAEINAE, which the entire scarab community knows refers to dung beetles. Even as a devotee of the Code, I and many others would be unlikely to follow these changes if they are allowed to stand, and hundreds, if not thousands of publications using these names would suffer an identity crisis because of a fundamental change in concepts.

I urge the Commission to use its plenary power to conserve the current usage of these names as proposed by Krell et. al.

(3) Hans Fery

Räuschstrasse 73, Berlin, Germany

(e-mail: hanfry@aol.com)

I support the application by Krell et al. The consequences which the authors demonstrate on p. 186 of their application are very unwarranted and considerably threaten the stability of nomenclature. This can be avoided by setting ‘... aside all type species fixations for the nominal genus *Scarabaeus* Linnaeus, 1758 before that of *Scarabaeus sacer* Linnaeus, 1758 by Hope, 1837; ...’ as proposed by the applicants (BZN 69:186).

For the understanding of the reader I want to add a relatively small detail which, however, does not affect the principal intention of the application. The applicants state that according to their source (Jolyclerc, 1807a, p. iii) Lamarck was responsible for the text cited above. This might be interpreted as ‘Lamarck himself wrote the respective part in Jolyclerc (1807b)’.

In Jolyclerc (1807b, p. 368) can be found the following text: ‘Ce genre, suivant Lamarck, doit être divisé en scarabés cornus ou épineux, soit sur le chaperon, soit sur le corselet; ...’ [This genus, following Lamarck, must be divided into scarabids with horns or spines, either on the head or on the pronotum; ...] and some lines further on: ‘L’insecte donné pour type à ce genre est le scarabé hercule, *scarabaeus hercules*, Lin.; ...’ [The insect given as type of this genus is the scarabé hercule, *Scarabaeus hercules*, Linnaeus; ...].

The title page of Jolyclerc (1822, the 2nd edition of Jolyclerc, 1807a) states ‘... d’après ... Lamarck et Latreille, pour les Insectes; ...’ [according ... to Lamarck and Latreille, for the insects; ...]; and on p. iii (Préface): ‘... il nous suffira de citer les auteurs ... Pour les insectes, M. Lamarck; et nous avons ajouté les nouvelles espèces décrites par Latreille ...’ [... we consider it to be enough to cite the authors ... For the insects, M. Lamarck; and we have added the new species described by Latreille ...].

The words ‘suivant Lamarck’ (repeated at other places in Jolyclerc, 1807b, although no such author is given in similar situations, e.g. under the entry ‘Scaure, *Scaurus*’) and ‘il nous suffira de citer ... M. Lamarck’ are in contrast to the assumption that Lamarck himself has written those parts in Jolyclerc (1807b, p. 368).

In Lamarck (1801, p. 206) the ‘*Scarabaeus hercules*. L. Fabr.’ is given as the single member of genus ‘*Scarabaeus*. L.’ It is likely that Jolyclerc (1807b) cited this part of

Lamarck (1801) and treated the taxon as type species because it was the only one given by Lamarck.

If my suspicions are correct, this would not affect the year, however, the authorship of that type designation might then be considered to be Jolyclerc himself.

If, however, the Commission sets aside all type species fixations for the nominal genus *Scarabaeus* Linnaeus, 1758 before that of *Scarabaeus sacer* by Hope (1837), then this slight difficulty is absolutely unimportant.

I thank F.-T. Krell for valuable information and for sending copies of rare papers.

Additional references

- Lamarck, J.B.** 1801. *Système des animaux sans vertèbres*. viii, 432 pp. Deterville, Paris.
Jolyclerc, N. 1822. *Nouveau dictionnaire raisonné et abrégé d'histoire naturelle. Tome premier*. Samson Fils, Paris. [accessed at http://books.google.de/books?id=_5BOkaCYDWIC&printsec=frontcover&hl=de&source=gbg_ge_summary_r&cad=0#v=onepage&q&f=false]

Comment on *Hemerodromia* Meigen, 1822 and HEMERODROMIINAE Schiner, 1862 (Insecta, Diptera, EMPIDIDAE): proposed conservation of usage of the genus-group and family-group names

(Case 3589; see BZN 69: 191–194)

Milan Chvála

Charles University, Prague, Czech Republic (e-mail: mchvala@iol.cz)

I strongly support the conservation of the current usage of the generic name *Hemerodromia* Meigen, 1822 to guarantee stability of nomenclature in the dipteran family EMPIDIDAE.

Since 1973 I have published more than 130 papers on the family EMPIDIDAE including several monographs and a substantial reclassification of this formerly polyphyletic family (Chvála, 1983). I know quite well what would happen within the nomenclature of the family if the genus name *Hemerodromia* Meigen were not conserved.

Additional references

- Chvála, M.** 1983. The Empidoidea of Fennoscandia and Denmark 2, *Fauna Entomologica Scandinavica*, Vol. 12. 279 pp. Brill, Leiden, The Netherlands.

Comment on the proposed replacement of unidentifiable name-bearing type by a neotype for *Plateosaurus engelhardti* von Meyer, 1837 (Dinosauria, Sauropodomorpha)

(Case 3560; see BZN 69: 203–212)

Vahe Demirjian

11 Canyon Terrace, Newport Coast, CA 92657 U.S.A.

(e-mail: vahedemirjian@cox.net)

In Case 3560, Galton discussed the taxonomic history of the well-known sauropodomorph genus *Plateosaurus*. In this Case, Galton asked the Commission to designate SMNS 13200 as the neotype of *Plateosaurus engelhardti*. I would like to

express support for Case 3560 for the following reasons, both nomenclatural and taxonomic.

The case is complicated by the fact that there has been no consensus on the taxonomic composition of abundant plateosaurid remains from upper Norian deposits in Germany, with some authors (Galton 2000, 2001a,b; Galton & Upchurch, 2004; Galton & Kermack, 2010) treating *P. longiceps* as distinct from *P. engelhardti*, and other authors (Moser, 2003; Yates, 2003) following Galton (1984a, 1985a) in considering *P. longiceps* and *P. trossingensis* as junior synonyms of *P. engelhardti*. The more recent paper by Prieto-Marquez & Norell (2011) used *Plateosaurus erlenbergiensis* Huene, 1908 (the original description is often listed as Huene, 1905, but the 1905 paper by Huene contained no description and thus *P. erlenbergiensis* Huene, 1905 is a nomen nudum) for all diagnostic specimens from Germany traditionally referred to as *P. engelhardti*, but did not comment on the diagnosability of the *P. engelhardti* lectotype (UEM 552) or discuss differences between *Plateosaurus* specimens from Trossingen and Halberstadt.

The name *Plateosaurus* is well entrenched in the literature and SMNS 13200 has been used as the reference specimen when comparing *Plateosaurus* with other basal sauropodomorphs (e.g. *Massospondylus*, *Anchisaurus*). To otherwise relegate *Plateosaurus* to the status of a nomen dubium would upset nomenclatural stability and further exacerbate taxonomic confusion because, as acknowledged by Galton, UEM 552 is distinct from *P.* (= *Sellosaurus*) *gracilis*, *P.* (= *Gresslyosaurus*) *ingens*, *Efraasia minor*, and *Ruehleia bedheimensis*, but not *sacra* referred to *P. longiceps* and *P. trossingensis*. Since the genus *Ruehleia* Galton, 2001 differs from *Plateosaurus*, and the holotype of *Efraasia minor*, in having a dorsal incorporated into the sacral (Galton, 2001a, b), other putative synonyms of *P. engelhardti* (*Dimodosaurus poligniensis*, *Gresslyosaurus plieningeri*, *G. robustus*, *G. torgeri*, *Plateosaurus reiningeri*, *P. quenstedti*, *Pachysauriscus ajax*, *P. magnus*, and *P. wetzelianus*) should be re-assessed to see if they are conspecific with either of the two species of *Plateosaurus* recognized by Galton & Kermack (2010), or *Ruehleia*. On the other hand, the holotype of *Plateosaurus erlenbergiensis* (SMNS 6014) may be conspecific with either SMNS 13200 or MB.R.1937 as it preserves cranial material to be compared with *P. longiceps* and *P. engelhardti* (= *P. trossingensis*), but further study of SMNS 6014 is required to confirm this. Finally, '*Pachysaurus*' *giganteus* Huene, 1932 still stands as a nomen dubium in Sauropodomorpha indet. (as per Galton, 2001b) because the three holotype fibulae (GPIT E, which almost certainly come from two individuals) are not diagnostic to genus or species level (as per Galton, 2001b).

Given the risks of nomenclatural stability resulting from abandoning use of the name *Plateosaurus*, I strongly support the proposals in Case 3560.

OPINION 2309 (Case 3429)

CHARILAIIDAE Dirsh, 1953 (Insecta, Orthoptera): proposed precedence over PAMPHAGODIDAE I. Bolívar, 1916 not granted

Abstract. The Commission has not supported the request to give the name CHARILAIIDAE Dirsh, 1953, for a group of African grasshoppers, precedence over the senior name PAMPHAGODIDAE I. Bolívar, 1916.

Keywords. Nomenclature; taxonomy; Orthoptera; CHARILAIIDAE; PAMPHAGODIDAE; grasshoppers; Africa.

Ruling

It is hereby ruled that the application to give the name CHARILAIIDAE Dirsh, 1953, for a group of African grasshoppers, precedence over the senior name PAMPHAGODIDAE I. Bolívar, 1916 is not approved. No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3429

An application to conserve the usage of the name CHARILAIIDAE Dirsh, 1953 for a group of African grasshoppers by giving it precedence over the senior name PAMPHAGODIDAE I. Bolívar, 1916, was received from David C. Eades and Lesley S. Deem (*Illinois Natural History Survey, Champaign, IL, U.S.A.*) on 28 June 2007. After correspondence the case was published in BZN **65**: 20–23 (2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 March 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 21–22. One Commissioner split his vote, so that proposals 4(b) and 4(d) FAILED, while all other proposals were approved by a majority of Commissioners (11 FOR, 10 AGAINST) but failed to meet the two-thirds majority required for approval. In accordance with the bylaws, the proposals in BZN **65**: 21–22 were sent for a revote on 1 June 2012. At the close of the voting period on 1 September 2012 the votes were as follows:

Affirmative votes – 2: Kullander and Zhou.

Negative votes – 21: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kottelat, Lim, Lamas, Minelli, Pape, Rosenberg, Štys, van Tol, Yanega and Zhang.

Winston abstained.

Ng, Patterson and Pyle were on leave of absence.

In the first round of voting the Commissioners commented as follows. Voting AGAINST, Alonso-Zarazaga explained that the authors did not achieve, in his opinion, a full demonstration that CHARILAIIDAE was in prevailing usage. Some of the

references they quoted were of exactly the same kind as that mentioned in their para. 7: 'a list contained within a single sentence' which only demonstrated that authors copy each other. Moreover, the authors mentioned the Orthoptera Species File Committee as the main source for recommendations in Orthopteran names. They were a source as any other, not the ultimate reference. Bisby's references were annual issues of the same database. Both names had been described in the 20th century, and Dirsh, a reputed specialist, missed the taxon described by another reputed specialist, I. Bolívar. Alonso-Zarazaga felt that priority should be applied here as the main principle of the Code, since the taxa had no economic, medical or veterinarian interest. He suggested that since no comments had been received, this indicated that orthopterologists were not interested in this question. He also noted that the name should be correctly written Bolívar, not Bolivar, as written in the application. Also voting AGAINST, Bouchet said he was not very impressed by the list of references given as evidence that the name CHARILDAE had become widely accepted: four references were by the author of the name CHARILDAE himself, three were by one of the authors of the application, which left seven more references by seven different authors. Species 2000 (Bisby et al., various editions), ITIS, GenBank, GBIF and Tree of Life were all interconnected, and if PAMPHAGODIDAE were restored as the valid name this usage would cascade from one database to the next. So this left fewer than ten references in favour of CHARILDAE, versus three (Johnston, 1956; Kevan, 1961; Vickery, 1997) in favour of PAMPHAGODIDAE. Bouchet felt that priority should apply. Also voting AGAINST, Kottelat said the priority of PAMPHAGODIDAE had been known since 1961, but for 48 years the Code had not been followed and the Commission is now asked to endorse the resulting situation. The application did not mention the consequences of strictly following the Code besides adjusting to a new name, something which taxonomists were used to doing. The application did not mention why changing the name of this small family of five species would create problems for taxonomists. He said he assumed that only taxonomists were concerned because the application mentioned neither non-taxonomic references nor any of non-taxonomic significance. The only point Kottelat could see would be the near homonymy with PAMPHAGIDAE, which he again felt was something that taxonomists were used to. Voting AGAINST, Ng noted that the family was very small with very few genera and species and had neither commercial nor other significance. His feeling, therefore, was that the change in family name would not have an impact on biologists in general. While he said he respected the views of the specialist group concerned, he also noted that no one had written in to support or endorse the application. He would therefore prefer to be conservative and strictly follow the Principle of Priority here.

In the second round of voting the Commissioners commented as follows. Both Alonso-Zarazaga and Bouchet voted AGAINST and said their comments from the first round of voting still applied. Halliday explained that he voted AGAINST because he did not believe there was sufficient evidence that reversal of precedence was justified. He felt that the authors had not shown that a simple application of the Principle of Priority would be damaging, except to a small handful of specialists. These were exactly the people who should be able to adapt quickly to the use of the correct valid name for this taxon. Also voting AGAINST, Harvey said he saw no exceptional circumstances in this case that would warrant the reversal of

precedence. The family was very small, with only five species in four genera, and apparently little known outside of taxonomic circles. Also voting AGAINST, Kojima said that there was little evidence was weak supporting significant prevailing usage of CHARILAIIDAE Dirsh, 1953 over PAMPHAGODIDAE I. Bolívar, 1916. Consisting of only five species in four genera, use of PAMPHAGODIDAE instead of CHARILAIIDAE for this group might not cause nomenclatural instability that required using the plenary power. Also voting AGAINST, Štys explained that he felt Principle of Priority was preferable. Also voting AGAINST, Lamas explained that in the first vote he had voted for the proposals but now, after having considered the comments made by Alonso-Zarazaga, Bouchet, Kottelat and Ng, he had changed his opinion and voted AGAINST. He believed strict priority should be followed here.

No names are placed on Official Lists and Indexes by the ruling given in the present Opinion. The issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

OPINION 2310 (Case 3547)***Cryptotermes dudleyi* Banks, 1918 (Insecta, Isoptera): precedence given over *Calotermes havilandi parasita* Wasmann, 1910 (currently *Cryptotermes parasita*)**

Abstract. The Commission has conserved the usage of the specific name *Cryptotermes dudleyi* Banks, 1918 for an important economic termite pest species by giving the specific name *dudleyi* precedence over *parasita* whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Isoptera; KALOTERMITIDAE; *Cryptotermes*; *Cryptotermes dudleyi*; *Cryptotermes parasita*; termites; worldwide.

Ruling

- (1) Under the plenary power, the Commission has given the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, precedence over the name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, whenever the two are considered to be synonyms.
- (2) The name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, is hereby placed on the Official List of Specific Names in Zoology with the endorsement that it is not to be given priority over the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, whenever the two are considered to be synonyms.
- (3) The entry on the Official List of Specific Names in Zoology for the name *dudleyi* Banks, 1918, as published in the binomen *Cryptotermes dudleyi*, is hereby amended to record the endorsement that it is to be given precedence over the name *parasita* Wasmann, 1910, as published in the trinomen *Calotermes havilandi parasita*, whenever the two are considered to be synonyms.

History of Case 3547

An application to conserve the usage of the specific name *Cryptotermes dudleyi* Banks, 1918 for an important economic termite pest species, by giving the specific name *dudleyi* precedence over *parasita* whenever the two are considered to be synonyms, was received from Kumar Krishna (*American Museum of Natural History, New York, NY, U.S.A.*) and Michael S. Engel (*Natural History Museum, University of Kansas, Lawrence, KS, U.S.A., and American Museum of Natural History, New York, NY, U.S.A.*), on 11 December 2010. After correspondence the case was published in BZN 68: 109–112 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 110–111. At the close of the voting period on 1 September 2012 the votes were as follows:

Affirmative votes – 18: Ballerio, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Kottelat, Kullander, Lamas, Minelli, Pape, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 6: Alonso-Zarazaga, Bouchet, Kojima, Lim, Štys and van Tol. Ng, Patterson and Pyle were on leave of absence.

Voting AGAINST, Alonso-Zarazaga explained that he thought the origin of the problem was the bad nomenclatural procedure used by Bacchus (1987) in establishing the synonymy between *C. parasita* and *C. dudleyi*. Therefore, he did not consider the uses before that date an argument against priority that Bacchus should have respected. Uses after 1987 were biased because of Bacchus's selection contrary to the Principle of Priority and very recent acts clearly contrary to the Code should be corrected as soon as possible, before they became widespread. Also voting AGAINST, Bouchet said that clearly the name *Cryptotermes* (or *Calotermes*) *parasita* had not been ignored by all systematists, although it did appear to have been neglected by some. The body of literature on *Cryptotermes dudleyi* was not, in his opinion, as overwhelming as implied in the application. He felt that priority should apply. He was convinced that pest control literature would produce handbooks and identification manuals that would rapidly propagate the revised nomenclature. Also voting AGAINST, Kojima explained that, in his view, a better and more reasonable solution would be to set aside the lectotype designation of *parasita* by Bacchus (1987) and designate a syntype from Europa Island as the lectotype of *parasita*. Also voting AGAINST, Štys said he thought the application was premature. Nobody seemed to check whether the opinion by Bacchus (1987) on the subjective synonymy between *Cryptotermes dudleyi* and *Calotermes havilandi parasita* was correct, and the former name was not actually threatened. Moreover, he found it inappropriate to call any name 'obscure' just because of being infrequently cited and applying to a limited geographical area.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

dudleyi, *Cryptotermes*, Banks, 1918, *Bulletin of the American Museum of Natural History*, 38(17): 660.

parasita, *Calotermes havilandi*, Wasmann, 1910, *Reise in Oskafrika in den Jahren 1903–1905: Mit Mitteln der Hermann und Elise geb. Heckmann Wentzel-Stiftung Ausgeführt. Wissenschaftliche Ergebnisse. Band III. Systematische Arbeiten. Heft II*. E. Schweizerbart'sche Verlag, Stuttgart, p. 120.

OPINION 2311 (Case 3538)**CORYNINAE Benson, 1938 (Insecta, Hymenoptera, Cimbicidae): spelling emended to CORYNIDINAE to remove homonymy with CORYNIDAE Johnston, 1836 (Cnidaria, Anthoathecata)**

Abstract. The Commission has removed the homonymy between two family-group names, CORYNINAE of Hymenoptera (Insecta) and CORYNIDAE of Anthoathecata (Cnidaria) by adopting the Greek genitive form *Corynid-* of the sawfly genus *Corynis* Thunberg, 1789 as the stem of the corresponding family-group name, giving CORYNIDINAE Benson, 1938. CORYNIDAE Johnston, 1836, a name for hydrozoans, remains unchanged.

Keywords. Nomenclature; taxonomy; Anthoathecata; Hymenoptera; Cimbicidae; CORYNIDAE; CORYNIDINAE; *Coryne*; *Corynis*; sawflies; hydrozoans; Palearctic.

Ruling

- (1) Under the plenary power, the Commission has ruled that for the purposes of Article 29 the stem of the generic name *Corynis* Thunberg, 1789 is *Corynid-*.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Corynis* Thunberg, 1789 (gender: feminine), type species *Tenthredo obscura* Fabricius, 1775 by subsequent designation by Morice & Durrant (1915) (Insecta, Hymenoptera);
 - (b) *Coryne* Gaertner in Pallas, 1774 (gender: feminine), type species by monotypy *Coryne pusilla* Gaertner in Pallas, 1774 (Cnidaria, Anthoathecata).
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *obscura* Fabricius, 1775, as published in the binomen *Tenthredo obscura* (specific name of the type species of *Corynis* Thunberg, 1789) (Insecta, Hymenoptera);
 - (b) *pusilla* Gaertner in Pallas, 1774, as published in the binomen *Coryne pusilla* (specific name of the type species of *Coryne* Gaertner in Pallas, 1774) (Cnidaria, Anthoathecata).
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) CORYNIDINAE Benson, 1938, type genus *Corynis* Thunberg, 1789 (spelling emended by the ruling in (1) above) (Insecta, Hymenoptera);
 - (b) CORYNIDAE Johnston, 1836, type genus *Coryne* Gaertner in Pallas, 1774 (Cnidaria, Anthoathecata).
- (5) The name CORYNINAE Benson, 1938 (spelling emended to CORYNIDINAE in (1) above) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3538

An application to remove the homonymy between two family-group names, CORYNINAE of Hymenoptera (Insecta) and CORYNIDAE of Anthoathecata (Cnidaria) by adopting the Greek genitive form *Corynid-* of the sawfly genus *Corynis* Thunberg, 1789 as the stem of the corresponding family-group name, giving CORYNIDINAE Benson, 1938, was received from Stephan M. Blank (*Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany*) and Mattias Forshage (*Swedish Museum of Natural History, Stockholm, Sweden*) on 26 October 2010. After correspondence the case was published in BZN 68: 113–116 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 115. At the close of the voting period on 1 September 2012 the votes were as follows:

Affirmative votes – 22: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Halliday, Harvey, Krell, Kojima, Kottelat, Kullander, Lamas, Lim, Minelli, Pape, Rosenberg, Štys, van Tol, Winston, Yanega, and Zhang.

Negative votes – 1: Grygier.

Zhou abstained. Ng, Patterson and Pyle were on leave of absence.

Voting FOR, Kottelat commented that he felt application of Article 29.3.1 made the case unnecessary, and therefore he would have voted against, but as Article 29.3.1.1 introduced some ambiguity he decided to vote in support to definitively clear the case.

Voting AGAINST, Grygier said he would have voted in favour if *Amasis* were a subjective junior synonym of *Corynis* and thus liable at some time to be shuffled into a different family-group taxon. Since the two genera were objective synonyms, the new AMASINAE/*Corynis* pairing would be eternal, with little scope for confusion, if the Commission ruled that the available name AMASINAE should replace the sawfly homonym CORYNINAE.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Coryne Gaertner in Pallas, 1774, *Spicilegia zoologica. Quibus novae imprimis et obscurae animalium species iconibus, descriptionibus atque commentariis illustrantur. Fasciculus x: 1–[42], index [1–10] in Pallas, P.S. 1767–1780. Spicilegia zoologica. Tomus I. Continens quadrupedum, avium, amphibiorum, piscium, insectorum, molluscorum aliorumque marinarum.* Gottl. August. Lange, Berolini, pp. 40–41.

CORYNIDAE Johnston, 1836, *History of the Berwickshire Naturalists' Club*, 1[1834]: 107.

CORYNINAE Benson, 1938, *Transactions of the Royal Entomological Society of London*, 87(15): 371.

Corynis Thunberg, 1789, *Periculum entomologicum, quo characteres generum Insectorum proponit etc. Dissert. Resp. S. Foerner.* Edman, Upsaliae, p. 13 and footnote h.

obscura, Tenthredo, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus.* xxxii, Officina Libraria Kortii, Flensburgi et Lipsiae, p. 319.

pusilla, *Coryne*, Gaertner in Pallas, 1774, *Spicilegia zoologica*. Quibus novae imprimis et obscurae animalium species iconibus, descriptionibus atque commentariis illustrantur. Fasciculus x: 1–[42], index [1–10] in Pallas, P.S. 1767–1780. *Spicilegia zoologica. Tomus I. Continens quadrupedum, avium, amphibiorum, piscium, insectorum, molluscorum aliorumque marinorum*. Gottl. August. Lange, Berolini, pp. 40–41.

OPINION 2312 (Case 3544)***Apis armbrusteri* Zeuner, 1931 (Insecta, Hymenoptera): name conserved by designation of a neotype**

Abstract. The Commission has conserved the name *Apis armbrusteri* Zeuner, 1931 for a species of fossil honey bee occurring in the Miocene fauna of southwestern Germany by designating a neotype.

Keywords. Nomenclature; taxonomy Hymenoptera; APIDAE; *Apis*; *armbrusteri*; *Cascapis*; *Hauffapis*; apiculture; fossil honey bees; Miocene.

Ruling

- (1) Under the plenary power, the Commission has set aside all previous type fixations for the nominal species *Apis armbrusteri* Zeuner, 1931 and designated as neotype a specimen from the same geological horizon at Randeck Maar (SMNS 64675 in the Staatliches Museum für Naturkunde, Stuttgart).
- (2) The name *Cascapis* Engel, 1999 (gender: feminine), type species by original designation *Apis armbrusteri* Zeuner, 1931 is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *armbrusteri* Zeuner, 1931, as published in the binomen *Apis armbrusteri* and as defined by the neotype designated in (1) above (specific name of the type species of *Cascapis* Engel, 1999) is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3544

An application to conserve the name *Apis armbrusteri* Zeuner, 1931 for a fossil species of honey bee occurring in the Miocene fauna of southwestern Germany by designating a neotype was received from Michael S. Engel (*Natural History Museum, University of Kansas, Lawrence, Kansas, U.S.A.*), Ulrich Kotthoff (*Geologisch-Paläontologisches Institut, Universität Hamburg, Hamburg, Germany*) and Torsten Wappler (*Steinmann-Institut für Geologie, Mineralogie und Paläontologie, Universität Bonn, Bonn, Germany*) on 15 November 2010. After correspondence the case was published in BZN 68: 117–121 (2011). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 119. At the close of the voting period on 1 September 2012 the votes were as follows:

Affirmative votes – 17: Ballerio, Bouchet, Brothers, Fautin, Harvey, Krell, Kottelat, Lamas, Lim, Minelli, Pape, Rosenberg, Štys, Winston, Yanega, Zhou and Zhang.

Negative votes – 6: Alonso-Zarazaga, Grygier, Halliday, Kojima, Kullander and van Tol.

Bogutskaya abstained. Ng, Patterson and Pyle were on leave of absence.

Voting FOR, Brothers said that despite the apparent situation that there was no other species in the relevant deposits which could be confused with *A. armbrusteri*, that was a matter of taxonomic judgment. Designation of a diagnostic neotype would assist in clarifying taxonomic limits. Although he voted FOR, Kottelat felt that the application was not well written. Also voting FOR, Yanega commented that while a neotype might not be required in cases where there was no taxonomic confusion regarding an inferior type's identity, the existence of a junior synonym which could be interpreted by some authors as being the valid name 'by default' did suggest to him that invoking Article 75.5 (which exists for this sole reason) was appropriate in this case.

Voting AGAINST, Alonso-Zarazaga said he could not see the need for a neotype. He said that everybody seemed to agree on the identity of the extant holotype (even if it lacked diagnostic characters) and there was no taxonomic problem involved, menacing stability and universality, as required by Article 75.5. So this application fell under Article 75.2. Also voting AGAINST, Grygier said that at present everyone agreed that only one taxonomic species of fossil bee was involved; therefore, no matter what the holotype's condition, there was no pressing need for a neotype. Halliday explained that he voted AGAINST this application because he felt that the proposed action was unnecessary. He said there was no doubt about the taxonomic identity of *Apis armbrusteri*, so the authors were proposing a solution to a problem that did not exist. He felt that the Commission could not be asked to make a ruling on every species that had a poor-quality holotype. Also voting AGAINST, Kojima said that even though *Apis armbrusteri* Zeuner, 1931 could not be determined from its existing name-bearing type, its stability or universality did not seem to be threatened. He also noted that the type depository was not mentioned in this proposal.

Bogutskaya ABSTAINED, and explained that she could vote neither for nor against because of the following: (1) Considering the way the situation was narrated in the application, the Case did not seem to deserve voting; this opinion also appeared in e-mails from Harvey and Grygier who said that there was no taxonomic problem involved and no stability threatened and thus Article 75.5 was not entirely applicable. So, she said she would have voted against but she had found a paper by Kotthoff et al. (2011) (ZooKeys 96: 11–37, doi: 10.3897/zookeys.96.752) that described (page 13) what was indeed lacking from the Case. So, she would vote 'for' but obviously could not because of the fact that this [necessary] information was not in the Case text itself. (2) Even without regard to her point (1), she was not entirely satisfied with the lack of information. Missing was any indication as to whether the type series (or holotypes) of *scheuthlei*, *scheeri*, and *scharmanni* were extant (probably yes, since the authors told us these names were based on 'exceptionally well preserved early honey bees from the Early Miocene of Randeck Maar'). In case the type series (or holotypes) of these considered-to-be synonyms existed, why was the neotype not selected from them? It would have served stabilisation in a better way (linking *A. armbrusteri* sensu Zeuner & Manning (1976) with the Randeck Maar material). Further, if the neotype for some reason was selected from other material, why did the

authors not present information on whether the designation confirmed/supported the synonymisation of *armbrusteri*, *scheuthlei*, *scheeri*, and *scharmanni*?

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Cascapis Engel, 1999, *Journal of Hymenoptera Research*, **8**: 187.

armbrusteri, *Apis*, Zeuner, 1931, *Fortschritte der Geologie und Palaeontologie*, **9**: 292.

OPINION 2313 (Case 3510)

***Cyclodina aenea* Girard, 1857 (currently *Oligosoma aeneum*; Reptilia, Squamata, SCINCIDAE) and *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum*): specific names conserved and neotype designated**

Abstract. The Commission has conserved the usage of the specific names *Oligosoma aeneum* (Girard, 1857) and *Oligosoma ornatum* (Gray 1843), widely used for species of New Zealand skinks (copper skink and ornate skink), by setting aside the existing holotype of *Tiliqua ornata* Gray, 1843 and designating a neotype.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; SCINCIDAE; *Oligosoma*; *Cyclodina*; *Oligosoma ornatum*; *Oligosoma aeneum*; copper skink; ornate skink; New Zealand.

Ruling

- (1) Under the plenary power, the Commission has set aside the existing holotype of *Tiliqua ornata* Gray, 1843 and has designated as neotype specimen NMNZ RE.002457 (formerly NMNZ R.1815 and EDS.912) in the Museum of New Zealand Te Papa Tongarewa, Wellington, collected at Manakau, Horowhenua, by A.H. Whitaker on 7 September 1971.
- (2) The name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, and as defined by the neotype designated in (1) above, is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3510

An application to conserve the current usage of the specific names *Oligosoma aeneum* (Girard, 1857) and *Oligosoma ornatum* (Gray 1843), widely used for two species of New Zealand skinks (the copper skink and ornate skink), was received from Geoffrey B. Patterson (*Wilton, Wellington, New Zealand*) and Rodney A. Hitchmough (*Species and Ecosystems Unit, R & D, Department of Conservation, Wellington, New Zealand*) on 14 December 2009. After correspondence the case was published in BZN 67: 307–313 (2010). The title, abstract and keywords of the case were published on the Commission's website. One comment including revised proposals by the authors requesting to conserve the usage by setting aside the existing holotype of *Tiliqua ornata* Gray, 1843 and designating a neotype was published in BZN 68: 144.

Decision of the Commission

On 1 June 2012 the members of the Commission were invited to vote on the proposals published in BZN 68: 144, by use of the plenary power. At the close of the voting period on 1 September 2012 the votes were as follows:

Affirmative votes – 20: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Kottelat, Lamas, Minelli, Pape, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Kojima, Kullander and Lim.

Bouchet abstained.

Ng, Patterson and Pyle were on leave of absence.

Bouchet ABSTAINED, explaining that while the original application was technically untenable he completely agreed with the move to designate a neotype for *Tiliqua ornata*. However, he asked, why stop halfway to a good and modern solution: designate as neotype a specimen for which molecular data are available. He pointed out that the neotype was collected 41 years ago and might not be suitable for sequencing.

Voting AGAINST, Kojima said that approval of this proposal was suggested to be a precondition for the authors to publish their taxonomic accounts of these *Oligosoma* species. However, he felt that such a taxonomic conclusion should be published before a proposal was made.

Original references

The following is the original reference to the name placed on Official Lists and Indexes by the ruling given in the present Opinion:

ornata, *Tiliqua*, Gray, 1843, Descriptions of the Reptiles and Amphibia hitherto observed in New Zealand. In Dieffenbach, E. (Ed.), *Travels in New Zealand with contributions to the geography, geology, botany and natural history of that country*. John Murray, p. 202.

Notice of closure of Cases

The following Cases, for which receipts as new applications to the Commission were published though the cases were never published in full, are now closed:

Zanthomiza Swainson, 1837 and *Gliciphila* Swainson, 1837 (Aves, Passeriformes): proposed conservation of original spellings. Steven M.S. Gregory, Walter E. Boles & Les Christidis (Case 3557; acknowledgement of receipt published in BZN 68: 94).

Aphaenops Bonvouloir, 1862 (Insecta, Coleoptera): proposed conservation of spelling instead of *Aphoenops*. A. Faille, A. Casale, T.C. Barr, Jr., & A. Vigna Taglianti (Case 3565; acknowledgement of receipt published in BZN 68: 94).

ELATERIDAE Leach, 1815 (Insecta, Coleoptera): proposed precedence over CEBRIONIDAE Latreille, 1802. P.J. Johnson (Case 3577; acknowledgement of receipt published in BZN 68: 239).

Reticulitermes flavipes Clément et al., 1985 and related subspecific names (Insecta, Isoptera, RHINOTERMITIDAE): proposed suppression. C.D.R. Stephen & X.P. Hu (Case 3583; acknowledgement of receipt published in BZN 69: 2).

Eimeria lamporpeltisgetuli Duszynski & Upton, 2009 (Currently *Eimeria lampropeltisgetuli*; Apicomplexa, EIMERIIDAE): proposed emendation of spelling. C.T. McAllister & D.W. Duszynski (Case 3597; acknowledgement of receipt published in BZN 69: 159).

Sparus aurata Linnaeus, 1758 (Actinopterygii, Teleostei, Percomorphi, SPARIDAE): proposed emendation of the specific name. I. Ruiz-Jarabo & J.M. Mancera (Case 3606; acknowledgement of receipt published in BZN 69: 247).

Case ‘*Helix atlantica* Morelet & Drouët, 1857 (Mollusca, Gastropoda, Pulmonata): proposed conservation of current usage by designation of a neotype’ by A.M. de Frias Martins, L. Silva, K. Jordaens & T. Backeljau (Case 3553; acknowledgement of receipt published in BZN 68: 2; text of the case published in BZN 68(3): 170–174) has been withdrawn by the authors and is now closed without a vote due to the discovery of Drouët’s type collection of Azorean terrestrial molluscs in the Muséum Jardin des Sciences de Dijon.

INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE

Financial Report for the year 2011

The main work of the Commission during the year was on applications from zoologists in 17 countries to resolve problems of zoological nomenclature. These were published in the *Bulletin of Zoological Nomenclature*, together with Opinions (rulings) made by the Commission on other cases. Further applications were under consideration. Advice was given by the Commission's Secretariat in response to a large number of enquiries on matters of nomenclature from zoologists worldwide. Total income received by the Trust consisted of £33,805 for all publications produced by the Commission, £62,241 from appeal and general donations and £1,780 in bank interest and investment income bringing the total income for the year to £97,826.

Expenditure in 2011 was £91,130 on salaries and fees of the Secretariat of the Commission, £3,194 on appeal expenditure and ZooBank travel, £7,181 for printing the *Bulletin of Zoological Nomenclature* and for the distribution of all publications, £997 for office expenses and depreciation of office equipment and £2,100 for redrafting of governance papers for the Trust, bringing the total expenditure to £104,602.

The Secretariat of the Commission was again housed in the Natural History Museum, London, whom we thank for their continuing support. The Trust wishes to express its thanks to all the donors listed below who have contributed to the continuation of its work during the year for the international zoological and palaeontological community.

Donations and grants were received from:

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INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED
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Bulletin of Zoological Nomenclature	£33,228
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2,100

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DEFICIT FOR THE YEAR CARRIED TO BALANCE SHEET

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